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## The Effects of Expressive Writing on Stress, Mood, and Perception of Self-Efficacy and of Instructor

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**THE EFFECTS OF EXPRESSIVE WRITING ON STRESS, MOOD, AND  
PERCEPTION OF SELF-EFFICACY AND OF INSTRUCTOR**

BY

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## ABSTRACT

### **THE EFFECTS OF EXPRESSIVE WRITING ON STRESS, MOOD, PERCEPTION OF SELF-EFFICACY AND INSTRUCTOR**

**Sophia S. Tailor**  
**Old Dominion University, 2010**  
**Director: Dr. Nina W. Brown**

The purpose of this study was to determine if emotional disclosure through expressive writing would have an effect on stress, mood, self-efficacy, and perception of instructor in a population of undergraduate human services students. This study used a randomized control-group pretest-posttest design with three experimental conditions. There were 32 participants with (N = 10) emotional disclosure group, (N = 11) factual disclosure group, and (N = 11) the control group. The study was conducted over three consecutive days following a variation of Pennebaker's (1986) expressive writing protocol. Study measures and writing samples were collected via a web-based interface. The data were analyzed using paired t-tests and a series of one-way Analysis of Variance for within group pretest differences on the study measures and Analysis of Covariance for the between group differences on the posttest measures with the pretest scores as the covariate. Within group, comparisons were conducted to evaluate if there was a significant difference between the pre-test and posttest scores on the dependent variables stress, mood, self-efficacy, and perception of instructor within each experimental group. The results of the paired t-test indicate there was no significant difference among the three groups on the pretest and posttest measures on the dependent variables. Between group comparisons were conducted to determine if there was a difference among the experimental groups on the mean scores of the pretest. No significant difference was

found on the pretest measures of stress, mood, and perception of instructor. However, there was a significant difference on the pretest measure of self-efficacy. The post hoc analyses indicate that the significant difference was between the factual disclosure group and the control group. Finally, a series of ANCOVAS were conducted to explore the effect of expressive writing on the posttest scores of the dependent variables stress, mood, self-efficacy, and perception of instructor, while controlling for the pretest scores. The pretest scores were used as covariates in the analysis. The results of the ANCOVAS indicate there was no significant difference among the three groups on the posttest scores on the dependent variables stress, mood, self-efficacy, and perception of instructor.

## DEDICATION

This dissertation is dedicated to Rebecca Candice Tailor, my shining star. Thank you for those late evening hugs each time I picked you up from the sitter. You are the reason I started and was able to finish this long journey. ...."May God bless you and watch over you. May God shine His face toward you and show you favor. May God be favorably disposed toward you and grant you peace". I love you.

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## **CHAPTER I: INTRODUCTION**

### **Background**

College students confront many issues and concerns that inhibit their ability to function well and maintain a constructive pace with their academic endeavors. According to D’Zurilla & Sheedy (1991), college students, are prone to stress, particularly in their first year. Stress as well as other pressures associated with the transitional nature of college may affect the student’s ability to cope (Towes & Cohen, 1996). College students experiencing stress and transitional difficulties may benefit from exposure to the expressive writing paradigm. Dr. James Pennebaker's research on the efficacy of writing as a means to improve the health and mental well being of various populations has resulted in improved outcome for many. The protocol for expressive writing asks study participants to write about a trauma or some neutral topic for 15 minutes a day for 3-4 consecutive days. Pennebaker and Beall (1986) found that undergraduates who wrote about stressors in their life had fewer health center visits in the six months after participating in an expressive writing study. Since that time hundreds of studies have been conducted using various populations. Expressive writing can be implemented as a short term, inexpensive method to help students confront past traumas, neutralize problems concerning inhibition, and promote self-determining behaviors.

### **Purpose of Study**

The purpose of this study is to determine if emotional disclosure through expressive writing will have an effect on stress, mood, and perceptions of self-efficacy

and instructor for undergraduate students majoring in human services. Expressive writing has been implemented as an intervention for physical and psychological impairments. In this study, expressive writing in a non-clinical population may demonstrate an effect on physical and psychological health of study participants.

### **Description of Study**

Participants were recruited for this study by asking faculty members to allow the researcher to seek volunteers within their classes. Study participants were randomly assigned to one of three treatment conditions: emotional disclosure group, factual disclosure group and the non-writing control group. The emotional disclosure group wrote on a topic related to a negative experience related to being a student. The factual disclosure group wrote on a topic related to future academic plans and the control group did not write. The two writing groups wrote for 15 minutes per day for three days. All three groups completed a demographic survey and four measures pre and post the expressive writing intervention. The four measures that were used are Pennebaker Inventory of Limbic Languidness, Multiple Affect Adjective Checklist-Revised, General Self-Efficacy Scale and Source Credibility Measure.

### **Rationale**

In conducting this study, the researcher hoped to contribute to the literature on expressive writing as an intervention for stress, mood, self-efficacy, and perception of instructor in a non-clinical population. Despite several studies demonstrating the benefits of expressive writing on a many different variables, no studies have examined the

interaction of these variables and their possible effect on academic outcome for undergraduate students.

### **Theoretical Foundation**

*The Expressive Writing Paradigm.* The disclosure of deeply personal topics as a therapeutic technique is an entrenched and long-standing feature of Western culture (Georges, 1995). James W. Pennebaker's research on the efficacy of writing as a means to improve the health and mental well being of various population has resulted in improved outcome for many. Pennebaker & Francis (1996) posit, that written emotional disclosure allows individuals to find meaning and increase understanding of their emotional reaction to events. The protocol for expressive writing asks study participants to write about a trauma or some neutral topic for 15 minutes a day for 3-4 consecutive days.

### **Research Questions**

This study addressed the following research questions:

*RQ<sub>1</sub>.* What is the effect of expressive writing on perceived stress in a sample of undergraduate human services students?

*RQ<sub>2</sub>.* What is the effect of expressive writing on mood in a sample of undergraduate human services students?

*RQ<sub>3</sub>.* What is the effect of expressive writing on perceived self-efficacy in a sample of undergraduate human services students?

*RQ<sub>4</sub>*. What is the effect of expressive writing on perception of instructor in a sample of undergraduate human services students?

### **Hypotheses**

H<sub>1</sub>. There were no significant difference for the emotional disclosure experimental group between the pretest and posttest measure of stress as assessed by the Pennebaker Inventory of Limbic Languidness.

H<sub>2</sub>. There were no significant difference for the emotional disclosure experimental group between the pretest and posttest measure of mood as assessed by the Multiple Affect Adjective

H<sub>3</sub>. There were no significant difference for the emotional disclosure experimental group between the pretest and posttest measure of self-efficacy as measured by the General Self-Efficacy Scale.

H<sub>4</sub>. There were no significant difference for the emotional disclosure experimental group between the pretest and posttest measure of perception of instructor as measured by the sub scales of the Source Credibility Measure.

H<sub>5</sub>. There were no significant difference for the factual disclosure experimental group between the pretest and posttest measure of stress as assessed by the Pennebaker Inventory of Limbic Languidness.

H<sub>6</sub>. There were no statistical significant difference among the factual disclosure experimental group on the pretest and posttest measure of mood as assessed by the Multiple Affect Adjective Checklist-Revised.

H<sub>7</sub>. There were no statistical significant difference among the factual disclosure experimental group on the pretest and posttest of self-efficacy as measured by the General Self-Efficacy Scale.

H<sub>8</sub>. There were no statistical significant difference among the factual disclosure experimental group on the pretest and posttest measure of perception of instructor as measured by the sub scales of the Source Credibility Measure.

H<sub>9</sub>. There were no statistical significant difference among the control group on the pretest and posttest measure of stress as assessed by the Pennebaker Inventory of Limbic Languidness.

H<sub>10</sub>. There were no statistical significant difference among the control group on the pretest and posttest measure of mood as assessed by the Multiple Affect Adjective Checklist-Revised.

H<sub>11</sub>. There were no statistical significant difference among the emotional disclosure experimental group on the pretest and posttest measure of self-efficacy as measured by the General Self-Efficacy Scale.

H<sub>12</sub>. There were no statistical significant difference among the control group on the pretest and posttest measure of perception of instructor as measured by the sub scales of the Source Credibility Measure.

H<sub>13</sub>. There were no significant difference among the emotional disclosure experimental group, the factual disclosure experimental group, and the control group on the pretest measure of stress as assessed by the Pennebaker Inventory of Limbic Languidness.



H<sub>14</sub>. There were no significant difference among the emotional disclosure experimental group, the factual disclosure experimental group, and the control group on the pretest measure of mood as assessed by the subscales of the Multiple Affect Adjective Checklist-Revised.

H<sub>15</sub>. There were no statistical significant difference among the emotional disclosure experimental group, the factual disclosure experimental group, and the control group on the pretest measure of self-efficacy as measured by the General Self-Efficacy Scale.

H<sub>16</sub>. There were no statistical significant difference among the emotional disclosure experimental group, the factual disclosure experimental group, and the control group on the pretest measure of perception of instructor as assessed by the Source Credibility Measure.

H<sub>17</sub>. There were no significant difference among the emotional disclosure experimental group, the factual disclosure experimental group, and the control group on the posttest measure of stress as assessed by the Pennebaker Inventory of Limbic Languidness.

H<sub>18</sub>. There were no statistical significant difference among the emotional disclosure experimental group, the factual disclosure experimental group, and the control group on the posttest measure of mood as assessed by the subscales of the Multiple Affect Adjective Checklist-Revised.

H<sub>19</sub>. There were no statistical significant difference among the emotional disclosure experimental group, the factual disclosure experimental group, and the control

group on the posttest measure of self-efficacy as measured by the General Self-Efficacy Scale.

H<sub>20</sub>. There were no statistical significant difference among the emotional disclosure experimental group, the factual disclosure experimental group, and the control group on the posttest measure of perception of instructor as assessed by the Source Credibility Measure.

### **Limitations**

Some of the possible limitations to this study include:

Student perception of instructor may be influenced by having previously enrolled in a course taught by the instructor.

The use of self-report scales for pretest and posttest measurement of stress, perception, and mood.

Location of classes may influence perception of instructor due to the student's preference or dislike of the class location.

Interaction of selection and treatment may limit generalizability across persons.

Interaction of setting and treatment may limit the generalizability across settings.

### **Assumptions of the Study**

The present study endeavors to explore the effects of expressive writing on stress, mood, and perception of self-efficacy and instructor. It is hypothesized that the participants in the expressive writing condition will demonstrate a difference in stress

level, mood, and perception of self-efficacy, which will mediate perception of instructor post expressive writing intervention.

### **Definition of Terms**

Expressive Writing- exercised aimed at the emotional disclosure of thoughts and feelings about a topic. The written expression is normally for 15-20 minutes on three consecutive days.

Perception of Instructor- participant's impression of instructor relationship attributes and communication skills.

Instructor Credibility- refers to an instructors relationship attributes and non verbal communication skills while interacting with students.

Self-Efficacy- self-evaluation of one's competence to successfully execute a course of action necessary to reach desired outcomes

Student Evaluation of Faculty- system used by colleges and universities to evaluate the teaching skills of faculty.

## **CHAPTER II: LITERATURE REVIEW**

This chapter will examine literature relevant to the study of the effects of expressive writing on stress, mood, perception of self-efficacy and student perception of instructor. The review of literature begins with an overview of the expressive writing paradigm and the various studies on expressive writing as an intervention and expressive writing with clinical and non-clinical populations. The review of literature will also examine general stress and stress in academic settings. The examination of literature will also look at state/trait mood and moods effect on academic outcome. Additionally, the review of literature will examine literature on social cognitive theory, the construct self-efficacy, and self-efficacy and academic outcome. Finally, the literature review will examine literature on student perception of instructor credibility and literature on perception of instructors effect on academic outcome. This review will include empirical and theoretical literature to provide a broad examination of literature relevant to the effects of expressive writing on stress, mood, perception of self-efficacy, and student perception of instructor.

Expressive writing is a potentially promising intervention, which may have an effect on student's stress level, student's mood, student's self-efficacy, and student perception of instructor.

### **The Expressive Writing Paradigm**

The Expressive Writing paradigm refers to the process of applying writing as a therapeutic tool to relieve physical and psychological ailments induced by stressful or traumatic experiences (Smyth & Greenberg, 2000). The underlying premise of

expressive writing is the disclosure of emotion. The expression of emotion in the therapeutic context is the common link among most therapeutic modalities, which demonstrates its significance to the therapeutic process. The mere act of disclosure may be the catalyst to most of the change that occurs in the therapeutic healing process. (Pennebaker, 1997). It is the work of Pennebaker and his colleagues that developed what is known as "The Writing Cure", the application of writing as a tool to release emotion and disclose previously held stressors and traumas. Pennebaker and Seagal (1999) discovered that disclosure of traumatic and emotional experiences through writing has both physical and psychological benefits. Despite these health benefits, writing about traumatic and stressful life events makes people feel more unhappy and distressed in the hours after the expressive writing exercise (Pennebaker & Seagal, 1999).

Most expressive writing studies replicate Pennebaker's original protocol with variations in the writing topics, the length of time that participants write and the number of days that the study is administered. Pennebaker (1997) describes the basic writing paradigm in the following manner:

The standard laboratory writing technique involves randomly assigning each participant to one of two groups. All writing groups are asked to write about assigned topics for 3 to 5 consecutive days, 15 to 30 minutes each day. Writing is generally done in the laboratory with no feedback given. Participants assigned to the control conditions are typically asked to write about superficial topics, such as how they use their time. The standard instructions for those assigned to the experimental group are a variation of the following: "I would like you to write about your deepest thoughts and feelings about an

extremely important emotional issue that has affected you and your life...The only rule is that once you start writing continue to do so until your time is up." (p. 162)

The writing paradigm in its simplicity has yielded some impressive results as an intervention with various physical and psychological ailments. Pennebaker and his colleagues, have conducted research and demonstrated the efficacy of expressive writing with: asthma and rheumatoid arthritis patients (Kelly, Lumley, & Leisen, 1997), insomnia patients (Harvey & Farrell, 2003), patients with rumination and depression symptoms (Gortner, Rude, & Pennebaker, 2006), individuals recall of collective trauma (Fernandez & Paez, 2008), and male college students with restrictive emotionality (Wong and Rochlen, 2009). Pennebaker and many other researchers have extended Pennebaker's original work on the basic writing paradigm with success.

*How Does Expressive Writing Work.* Since the inception of expressive writing as a therapeutic intervention, the most controversial aspect has been the mechanism by which expressive writing provides health and psychological benefits. On one side of this controversy, some argue that expressive writing provides emotional catharsis. Still some argue that expressive writing stops emotional inhibition. In addition, some espouse expressive writing as a way to develop a narrative and increase cognitive processing. Yet, others posit that expressive writing's benefits are derived from the mechanism of exposure. Although the current study does not examine the mechanism by which expressive writing provides benefit, the researcher examined the current literature surrounding this controversy to gain a broad understanding of the discourse and possible implications this underlying mechanism will have on the current study.

*Emotional Catharsis.* Pennebaker and Beal (1986) acknowledges that the process of emotional catharsis does have benefits but does not provide as much benefit as writing about the event as well as thoughts and feels about the event. In the first expressive writing study, participants were assigned to a condition that wrote about the facts of a trauma. The participants in the fact writing condition did not demonstrate health benefits. Similarly, in a study on the benefits of expressive writing for male college students with restrictive emotionality Wong and Rochelen (2009) asked participants in the control group to write about human relationships in a impersonal manner. Those in the control group did not report a significant reduction in psychological distress compared to those in the experimental condition. Therefore, catharsis alone does not appear to be a sound explanation for how expressive writing works.

*Emotional Inhibition.* Pennebaker suggest that the repression or inhibition of emotion is important to the understanding of the benefits of disclosure. Pennebaker's (1985) theory proposed that actively inhibiting thoughts and feelings serves as a stress generator in the body and creates increased physiological activity and rumination about the event. Therefore, disclosure of thoughts and feeling about an event can diminish the physical and psychological effects of inhibition (Pennebaker, Hughes, & O'Heeron, 1987). Greenberg, et al (1992) conducted a study where participants disclosed imaginary traumas. These participants demonstrated significant improvements in physical health after expressive writing. The imagined traumas could not be inhibited due to the events being disclosed were not an event the participant had experienced. The finding of this study point out that disclosure of inhibited thoughts and feelings play a role in the mechanism of expressive writing but is not the only factor creating the successful results.

*Creating a Narrative and Cognitive Processing.* Pennebaker & Seagal, (1999) point out that disclosure is unequivocally at the core of therapy. Psychotherapy usually involves putting together a story that will explain and organize major life events causing distress (p.1243). Pennebaker and Seagal (1999) suggest that as individuals develop a story related to their experience of an event they begin to make meaning and draw conclusions. This creation of a narrative related to a traumatic event comes through cognitive processing. Smyth et al (2001) posits that narrative formation and coherence are necessary for expressive writing to be beneficial. Harber and Pennebaker (1992) explain that cognitive processing helps to organize and structure the memory and therefore creates a more adaptive schema related to the traumatic or stressful event.

*Exposure.* In one study on expressive writing Leopore et al (2002) posits that the writing paradigm may produce extinction of negative emotional responses through repeated exposure to traumatic memories. Exposure as a technique can be found in the work of Foa and Rothbaum (1998), in the treatment of post traumatic stress disorder and agoraphobia. Exposure therapy and the expressive writing paradigm differ in that the basic writing paradigm does not require the participants to write about the same topic at each writing interval. Therefore, the repeated exposure to a fear stimulus is not present in each experimental condition. Such procedural variations may affect the outcome of any study examining exposure techniques effect on expressive writing.

Due to the controversy surrounding the mechanism by which expressive writing provides health and psychological benefits Sloan and Marx conducted a meta-analysis . In this study Sloan and Marx (2004) examined expressive writing studies (N= 27) that utilized the expressive writing paradigm of Pennebaker and Beall (1986). In



summarizing the findings of Sloan and Marx(2004) Pennebaker (2004) states, " Sloan and Marx have demonstrated on a large scale what many others have acknowledged on smaller ones: no single theory appears to account for the effectiveness of the writing paradigm (p.138)." The finding of Sloan and Marx (2004) does not negate the efficacy of the writing paradigm but does suggest the need for and importance of further research on the mechanism underlying the expressive writing paradigm.

Without knowing the specific "How" of expressive writing, many studies have been conducted to examine its efficacy with clinical as well as non clinical populations in various settings. The review of literature will now examine the expressive writing paradigm with clinical populations.

*Expressive Writing with Clinical Populations.* There is a large body of research on the expressive writing paradigm as an intervention with clinical populations. Clinical populations include mental health ailments diagnosed according to the Diagnostic and Statistic Manual of Mental Disorders Four Text Revision and physical ailments covered under International Classification for Diseases.

A meta-analysis of expressive writing studies with clinical populations (N=9) included data from 496 participants (Frisina, et al, 2004). The studies examined the written emotional disclosure paradigm on health outcomes of people with physical and psychiatric disorders. The results of the meta-analysis indicate that the expressive writing paradigm improved the health of study participants. There was a more significant improvement in physical ( $d = .21$ ;  $p < .01$ ) than with psychological ( $d = .07$ ;  $p = .17$ ) health outcomes ( $Q_b > 10.83$ ;  $p < .001$ ). Expressive writing with cancer patients has demonstrated mixed results. In a study examining the effect of expressive writing with

breast cancer patients, Walker, Nail and Croyle (1999) randomly assigned participants (N=44) to one of two experiment conditions. The two groups consisted of a writing group and non-writing group. No statistically significant differences were found between the two groups. Stanton et al. (1999) conducted a similar study with breast cancer patients (N= 60). Participants were randomly assigned to write positive thoughts and feelings about their experience of breast cancer or write about the facts of their experience with breast cancer. The study did not demonstrate a group difference in psychological outcome. However, those that wrote expressively about their experience with breast cancer reported improvement in their physical symptoms compared to the groups that wrote factually about breast cancer. In a study looking at the effect of expressive writing on blood pressure in patients diagnosed with hypertension (N=38), McGuire, Greenburg and Gevirtz (2005) found participants assigned to the experimental condition demonstrated short term benefits and long term moderated effects. Study participants assigned to the experimental condition showed a drop in systolic and diastolic pressure from baseline to one-month follow-up. In another study, fibromyalgia patients (N=92) were randomized to a trauma writing group, control group, or usual care group. The writing group, wrote in the laboratory for 20 minutes on 3 days at 1 week intervals. The trauma writing group experienced a reduction in pain (effect size =0.49) and fatigue (effect size = 0.62) compared to the control group and usual care group. The study reported the results were maintained at the 4-month follow-up but did not maintain until 10-month follow-up. In a study examining the effects of expressive writing on pain, depression and posttraumatic stress disorder with the survivors of intimate partner violence (N=47) Koopman et. al (2005), exposed participants to one of two conditions,

expressive writing treatment or neutral writing treatment. The study results demonstrated a significant drop in depression scores on the Beck Depression Inventory.

The preceding studies demonstrated the efficacy of writing about emotions related to trauma or stressful life experiences in some clinical populations. The current study seeks to add to the existing body of research on the effects of expressive writing within non-clinical populations. Therefore, the literature review will examine expressive writing with non-clinical populations and of relevance to this study expressive writing with non-clinical college student populations.

*Expressive Writing with Non-Clinical Populations.* In one of his many subsequent studies Chung and Pennebaker (2008) examined whether college students (N=106) writing about a life transition once per hour for 3 hours or three times in 1 hour is as effective as the traditional once per day approach to expressive writing. The findings from this study indicate that those assigned to the experimental condition evidenced fewer symptoms at the 9-month follow-up. These findings indicate that the one-hour expressive writing exercise is more emotionally demanding but is as effective as the traditional 3-day writing method. In a study looking at the effects of expressive writing about dreams that follow trauma and loss on psychology students (N=45), who recently experienced either significant trauma or significant loss. The authors found that expressive writing is beneficial to those who have recently experienced a trauma but not those who have experienced loss. In a study looking at expressive writings effect on mood, cognitive processing, social adjustments and health following a relationship breakup with female undergraduate students (N=73). Participants in the experimental group were more likely to reunite with their ex-partners (Lepore and Greenberg, 2002).

The researchers suggested that expressive writing influences social adjustment. This study supports previous studies findings that demonstrate that expressive writing allows individuals to make meaning of previous unresolved life stressors by disclosing the details of the situations. One limitation to this study was that the researchers did not address the mechanism through which expressive writing enhances social adjustment. In a study looking at the effects of expressive writing on maladaptive rumination in a population of first year college students (N= 69). Participants were randomly assigned to either an expressive writing condition (n=35) or a control writing condition (n=34). Participants in both conditions wrote continuously for 20 minutes each session on 3 consecutive days. The study's findings showed that participants in the expressive writing condition showed a change in depression symptoms versus those in the control condition, which demonstrated no statistically significant change in depression symptoms. The study design followed the typical protocol for expressive writing. In another study, Lumley and Provenzano (2003) examined expressive writing's effect on academic performance of college students. The writing experiment was for 4 days. The study participants (n=74) were randomly assigned to an expressive writing condition writing on stress (experiment) or a writing condition on time management (control). Participants rated their mood before and after writing each day of the study. The results of the study indicate that the experimental writing condition led to improved GPAs in subsequent semesters and improved mood.

The review of these studies suggests that clinical as well as non-clinical populations can benefit from expressive writing. The present study will explore expressive writing's effect on four constructs that have been correlated with successful

academic outcome: stress, mood, perceived self-efficacy, and perception of instructor credibility. In studying the effects of expressive writing on the listed constructs, this study will add to the body of research on expressive writing as an intervention with non-clinical populations.

## **Stress**

*History of Stress Concept.* The concept of stress was originally used in the field of engineering to measure the capacity of metal, wood or concrete to withstand strain (Parker, 1961). A new use of this concept was studied by Hans Selye in his book, *The Stress of Life* (1956). In his landmark research on stress he discovered the stress syndrome and defined stress as the adaptation to a threatening event. Selye later published, "Stress without Distress." In this work, Selye (1974) defined stress as "The nonspecific response of the body to any demand made upon it" (p. 14). Many other theorists have developed definitions of stress but there is not an agreement on one definition of stress. Dunham (1992) defined stress as "a process of behavioral, emotional, mental and physical reactions caused by prolonged, increasing or new pressures which are significantly greater than coping resources" (p.3). One of the most prevalent factors affecting student well being and academic outcome is stress. Towbes and Cohen (1996) hypothesized that the transition from adolescence into adulthood, increased college students vulnerability to stress. Therefore, the construct of stress and its effects on college student academic outcome were examined.

*Stress in Academic Settings.* College students, especially freshmen are a group particularly prone to stress (D'Zurilla & Sheedy, 1991). In a recent study on college

students and perceived stress, researchers found that among study participants 75% were in a moderate stress category; 12% in a high stress category and 13% in a low stress category (Pierceall & Keim, 2007). Dunham (1992) defined stress as "a process of behavioral, emotional, mental and physical reactions caused by prolonged, increasing or new pressures which are significantly greater than coping resources" (p.3). The dynamic relationship between the person and the environment in stress perception and reaction is especially magnified in college students. The problems and situations encountered by college students may differ from those faced by their non-student peers (Hirsch & Ellis, 1996). Wright (1964) points out that all jobs are going to have a level of stress involved, such as evaluation by superiors and striving for goals, but the continuous evaluation that college students are subjected to, such as tests and written assignments, is not experienced by non-students. In addition to academic requirements, relations with faculty members and time pressures may also be sources of stress (Sgan-Cohen & Lowental, 1988). Ross, Niebling and Heckert (1999) conducted a study, Sources of Stress Among College Students, this study was to determine what sources of stress are most prevalent among college students, and to examine the nature of these stressors. The study included 100 hundred undergraduate students from a national co-ed service fraternity. The study found that the most common source of stress was interpersonal stressors. Three of the top five sources of stress listed by the participants were interpersonal. The study also concluded that the five most frequent stressors were: change in sleeping habits, vacations/breaks, change in eating habits, new responsibilities, and increased class workload.

The studies examined indicate that stress is one of the most pervasive challenges that college students experience. A student's ability to cope with the stress associated with interpersonal relationships, class workload and acculturating to the college environment will have a direct effect on college student academic outcome. Therefore, expressive writing maybe an intervention that can be implemented to reduce stress levels with college student populations.

### **Mood**

*Mood.* In reviewing, the literature on mood the term "mood and emotion" are sometimes used interchangeably and therefore are not applied consistently in the literature. Although these two constructs seem similar, they are distinctly different. Thayer (1989) describes the difference between emotion and mood in this way: "Mood is related to emotion but when the term "mood" is used, it usually implies a longer course of time, which is the central distinction between the two (p.14)." Watson (2000) defines mood as a temporary occurrence of feeling or affect which external events and internal processes influence.

*Dimensions of Mood.* In the research on mood, one of the important areas of study has been the structure of mood. There are two prominent schools of thought with similar concepts. Both of these models of mood structure contain two broad dimensions. The first of the two models proposed by Russell and Ridgeway (1983) has two dimensions identified as pleasant versus unpleasant and are associated with increased physiological arousal and energy. Watson (2000) points out that this model does not measure discreet affects but classifies mood states into four types (1) pleasant and activated, (2) pleasant

unaroused, (3) unpleasant activated and (4) unpleasant and unaroused. The second model is that of Watson and Tellegen (1985). This model of mood structure proposes that, the two dimensions of mood are negative affect and positive affect. Watson and Clark (1997) explain, "Negative Affect dimension represents the extent to which one is nonspecifically experiencing a negative or aversive mood, such as feeling of nervousness, sadness, irritation, guilt, contempt, or disgust" (p.270). Positive Affect is a stable, heritable, and highly general temperamental dimension that includes positive emotionality, energy, affiliation, and dominance (Clark, Watson, & Mineka, 1994, p.107). These two-dimensional mood models appear different but are equally able to explain observed phenomena (Watson, 2000). For the purpose of the current study mood were conceptualized according to Watson and Tellgren's (1985) mood structure model of Negative Affect and Positive Affect. Watson (2000) makes clear that moods are not simply effects but can act as a causal agent that can influence behavior as well as produce systemic changes in thoughts. Of particular interest to this study is expressive writings as a means to induce positive affect and positive affect as a causal agent for academic outcome.

*Positive Affect.* Isen (2000) points to the body of research that indicates that positive affect can produce increased social behavior, such as generosity and improve memory, judgment, decision-making, motivation, and problem solving. Estrada et al. (1994) investigated the influence of positive affect on clinical reasoning among physicians, internist (N=44) were assigned to one of three treatment conditions. One group read humanistic statements regarding the practice of medicine. Another group served as the control and the final group was the affect induction group. Two raters



created transcripts of the physicians as they “thought aloud” while solving a case for liver disease. Those in the affect induction group integrated information earlier and demonstrated less anchoring than those in the other treatment conditions. In a seminal study conducted by Hettner and Ballif (1981) the effects of mood on learning was examined. The subjects (N=105) college students, were asked to rate the sentences on affect and memorized and then recall them. The students in elated moods learned significantly more material than students in depressed moods. In a study of positive emotions and thought actions college students (N=104) participated in two experiments. Experiment one measured scope of attention using global-local visual processing task and thought-action repertoires were assessed using twenty statements test. This study found in experiment one that positive emotions broadened the scope of attention in experiment one and thought action repertoires in experiment two. The current study posits that the various behavior and cognitive changes engendered by positive affect can be induced by expressive writing and thereby effect academic outcome.

### **Self-Efficacy**

*Self-Efficacy.* Bandura (1977) introduced the construct of self-efficacy in the seminal publication "Self-efficacy: Toward a Unifying Theory of Behavioral Change." Self-efficacy is defined as a self-evaluation of one's competence to successfully execute a course of action necessary to reach desired outcomes (Bandura, 1977). An extensive body of research has shown that academic self-efficacy is positively associated with grades in college (Brown, Lent, and Larkin, 1989; Hackett, Betz, Casas, & Rocha-Singh, 1992; Lent, Brown & Larkin, 1984; Multon, Brown, & Lent, 1991).

*Self-Efficacy and Academic Outcome.* Bandura (1993) points out that self-efficacy beliefs affect college outcomes by increasing students' motivation and persistence to master challenging academic tasks and by fostering the efficient use of acquired knowledge and skills. Self-efficacy beliefs have also received increasing attention in educational research, primarily in studies of academic motivation and self-regulation (Pintrich & Schunk, 1995). Academic self-efficacy can be defined as individuals' confidence in their ability to successfully perform academic tasks at a designated level (Schunk, 1991). Gore (2006) conducted two incremental validity studies to determine the extent to which academic self-efficacy beliefs could account for variance in college outcomes beyond that accounted for by standardized test scores. Results of the two studies indicate that academic self-efficacy beliefs predict college outcomes but the relationship is dependent on when efficacy beliefs are measured, the types of efficacy beliefs measured, and the nature of the criteria used (Gore, 2006). Scholz et al, 2002 conducted a study to examine the psychometric properties of the General Self-Efficacy Scale in 25 samples. Principal component analyses and confirmatory factor analysis were conducted to corroborate the unidimensionality of the construct of self-efficacy across various nationalities. The study replicated results by Schwarzer and Born (1997), who studied the psychometric properties of the general self-efficacy scale with samples from 13 nations. Although this study found statistical significance, the authors were unable to account for differences in the GSE sum scores between countries and gender. Saks (1995) conducted a study to test the extent to which initial self-efficacy moderates the relationship between training and adjustment and to test the extent to which post training self-efficacy mediates the relationship between training and adjustment. The study was

conducted over a one year period with first year employees. Saks (1995) reports that the results of the study indicate that the relationship between training and adjustment depends in part on newcomers' initial level of self-efficacy and the criteria of adjustment. This study provided several practical implications for the design of socialization programs for new employees. One of the most significant limitations to this study was the use of a self-report measure, which limits the researcher from making causal conclusions.

The literature reviewed on self-efficacy points to the significance of positive self-efficacy on academic achievement and adjustment to college as well as the benefits of self-efficacy in the general population. The current study will explore the effect of expressive writing on the perception of self-efficacy and hypothesizes that positive self-efficacy will engender successful academic outcome.

### **Perception of Instructor**

*Perception of Instructor.* In a study conducted by Reio et al (2009), found that quality student-instructor relationships have an especially powerful effect on school completion and academic performance. Perception of instructor is a significant variable in academic outcome. A student's perception of the instructor effects affective learning and in turn effects cognitive learning.

*Instructor Credibility.* Brann, Edwards and Myers (2005) posit that one of the most significant attributes needed by college instructors is credibility. Instructor credibility, is defined as "the attitude of a receiver which references the degree to which a source is seen as believable" (McCroskey, 1998, p. 80). Finn et al. (2009) points to the scope of the outcomes associated with instructor credibility:

Credibility is associated with everything from an instructor's age, ethnicity, and sexual orientation, to an instructor's use of nonverbal immediacy cues, humor, technology, power, student outcomes such as motivation, affect, cognitive learning, respect for teachers, perceive understanding, in-class and out-of-class communication, and generalized beliefs and attitudes about college. (p.530)

Credibility consists of three constructs: competence, character, and caring (Teven & McCroskey, 1997). Competence is the perception that the instructor is knowledgeable. Character is the perception that the instructor is trustworthy and caring is the perception that the instructor is concerned about the student's welfare (Martin & Myers, 2006). McCroskey et al. (2004) put forth the idea that teacher credibility is the student perception that most impacts learning outcomes. McCroskey et al. (1974) posits that students who perceived their instructor as competent were able to recall more accurate information after a lecture, were more likely to enroll in another course with that instructor, and recommend the instructor to other students. Finn et al. (2009) points out that when instructors communicate in a competent, trustworthy and caring way, these efforts will increase student's involvement in learning.

In a study exploring the impact of technology use, gender and perception of instructor Schrodt and Turman (2005) randomly assigned students (N=864) to one of 16 experimental conditions. The researchers used various scenarios and various uses of technology in two types of courses with a male and female instructor. The study results indicated that technology use produced the strongest effect size for the perceived caring dimension of instructor credibility. In another study on relationship between perceived instructor credibility and in-class and out-of class communication, Myers (2004) subjects

(N=158) completed four measures in reference to the instructor that they had prior to the questionnaire completion. The course where the questionnaire was administered represented students from various programs and would therefore provide information about professors across discipline. This data was collected at the end of the semester. Results indicate perceived instructor character and caring are positively related to student willingness to talk. Additionally, perceived instructor competence, character and caring are positively related to student out of class communication. Brann, Scott and Edwards (2005) conducted a study on instructor credibility and teaching philosophy. This study included students (N=244) who read short vignettes describing an instructor with either a transmissive or progressive teaching philosophy. The transmissive approach to teaching is a style where the teacher is the authority and source of knowledge; in progressive teaching style where the teacher is a consultant of the students learning. The results indicate that instructors with a transmissive or progressive teaching style did not differ in their perceived competence, but instructors with a progressive teaching style were rated higher in character and caring than instructors with a transmissive teaching style.

The studies reviewed indicate the importance of teacher credibility and academic outcome. Implementing the expressive writing paradigm to effect perception of instructor may have similar effects as expressive writing has demonstrated in clinical and non clinical populations to mediate experiences that impact emotion, and cognitive processes.

### **CHAPTER III: METHODOLOGY**

This study will examine the efficacy of expressive writing as an intervention with a non-clinical population of undergraduate student Human Services students. Pennebaker and Beall's (1986) protocol for expressive writing were implemented. Specifically, this study will investigate if expressive writing will have an effect on stress, mood, perception of self-efficacy, and perception of instructor. This chapter will detail the research design, study participants, study instruments, and analysis of data.

#### **Research Design**

This study used a Pretest-Posttest Control Group design. This design involves the random assignment of participants to two (or more) groups, with one group receiving treatment while the other group receives no treatment and thus serves as a control group. Both groups receive pretest and posttest measures (Helpner, Kivlighan & Wampold, 1999 p.126). The current study utilized the expressive writing protocol created by Pennebaker and Beall (1986). Study participants were randomly assigned to one of three experimental conditions: emotional disclosure group, factual disclosure group, and control group. All participants were administered pretest measures and wrote for 15 minutes per day for three consecutive days and completed posttest measures. Dimitrov and Rumrill (2003) point out that the most common threats to internal validity with this design are maturation and history. Maturation occurs when biological and psychological characteristics of study participants change during the experiment, thus affecting their posttest scores. History occurs when participants experience an event (external to the experimental treatment) that affects their post test scores (p. 160). The threat of internal validity due to

maturation and history in this study is low due to the short duration of the experiment. This design may have external threats to validity which include: interaction of setting and treatment and reactive interaction effect of pretesting (Dimitrov & Rumrill, 2003). This study were able to control for the reactive interaction effect of pretesting by using the pretest scores as a covariate in the data analysis. The external validity threat of setting and treatment cannot be controlled and is therefore, considered a limitation of the study design.

### **Research Questions**

This study addressed the following research questions:

- RQ1.* What is the effect of expressive writing on perceived stress in a sample of undergraduate human services students?
- RQ2.* What is the effect of expressive writing on mood in a sample of undergraduate human services students?
- RQ3.* What is the effect of expressive writing on perceived self-efficacy in a sample of undergraduate human services students?
- RQ4.* What is the effect of expressive writing on perception of instructor in a sample of undergraduate human services students?

### **Hypotheses**

H<sub>1</sub>. There were no significant difference for the emotional disclosure experimental group between the pretest and posttest measure of stress as assessed by the Pennebaker Inventory of Limbic Languidness.

H<sub>2</sub>. There were no significant difference for the emotional disclosure experimental group between the pretest and posttest measure of mood as assessed by the Multiple Affect Adjective

H<sub>3</sub>. There were no significant difference for the emotional disclosure experimental group between the pretest and posttest measure of self-efficacy as measured by the General Self-Efficacy Scale.

H<sub>4</sub>. There were no significant difference for the emotional disclosure experimental group between the pretest and posttest measure of perception of instructor as measured by the sub scales of the Source Credibility Measure.

H<sub>5</sub>. There were no significant difference for the factual disclosure experimental group between the pretest and posttest measure of stress as assessed by the Pennebaker Inventory of Limbic Languidness.

H<sub>6</sub>. There were no statistical significant difference among the factual disclosure experimental group on the pretest and posttest measure of mood as assessed by the Multiple Affect Adjective Checklist-Revised.

H<sub>7</sub>. There were no statistical significant difference among the factual disclosure experimental group on the pretest and posttest of self-efficacy as measured by the General Self-Efficacy Scale.

H<sub>8</sub>. There were no statistical significant difference among the factual disclosure experimental group on the pretest and posttest measure of perception of instructor as measured by the sub scales of the Source Credibility Measure.



H<sub>9</sub>. There were no statistical significant difference among the control group on the pretest and posttest measure of stress as assessed by the Pennebaker Inventory of Limbic Languidness.

H<sub>10</sub>. There were no statistical significant difference among the control group on the pretest and posttest measure of mood as assessed by the Multiple Affect Adjective Checklist-Revised.

H<sub>11</sub>. There were no statistical significant difference among the emotional disclosure experimental group on the pretest and posttest measure of self-efficacy as measured by the General Self-Efficacy Scale.

H<sub>12</sub>. There were no statistical significant difference among the control group on the pretest and posttest measure of perception of instructor as measured by the sub scales of the Source Credibility Measure.

H<sub>13</sub>. There were no significant difference among the emotional disclosure experimental group, the factual disclosure experimental group, and the control group on the pretest measure of stress as assessed by the Pennebaker Inventory of Limbic Languidness.

H<sub>14</sub>. There were no significant difference among the emotional disclosure experimental group, the factual disclosure experimental group, and the control group on the pretest measure of mood as assessed by the subscales of the Multiple Affect Adjective Checklist-Revised.

H<sub>15</sub>. There were no statistical significant difference among the emotional disclosure experimental group, the factual disclosure experimental group, and the

control group on the pretest measure of self-efficacy as measured by the General Self-Efficacy Scale.

H<sub>16</sub>. There were no statistical significant difference among the emotional disclosure experimental group, the factual disclosure experimental group, and the control group on the pretest measure of perception of instructor as assessed by the Source Credibility Measure.

H<sub>17</sub>. There were no significant difference among the emotional disclosure experimental group, the factual disclosure experimental group, and the control group on the posttest measure of stress as assessed by the Pennebaker Inventory of Limbic Languidness.

H<sub>18</sub>. There were no statistical significant difference among the emotional disclosure experimental group, the factual disclosure experimental group, and the control group on the posttest measure of mood as assessed by the subscales of the Multiple Affect Adjective Checklist-Revised.

H<sub>19</sub>. There were no statistical significant difference among the emotional disclosure experimental group, the factual disclosure experimental group, and the control group on the posttest measure of self-efficacy as measured by the General Self-Efficacy Scale.

H<sub>20</sub>. There were no statistical significant difference among the emotional disclosure experimental group, the factual disclosure experimental group, and the control group on the posttest measure of perception of instructor as assessed by the Source Credibility Measure.

### **Participants**

The participants involved in this study were undergraduate students enrolled in the Human Services program at the Darden School of Education at Old Dominion University. The students were recruited from five sections of Human Services classes with two instructors. The two female instructors are employed by the university as full time doctoral level educators. One faculty's ethnicity is Caucasian and the other faculty's ethnicity is African American. All classes are required for the completion of the Bachelor of Science in Human Services Degree. All participants were recruited on a voluntary basis. The participants included students of varying class standing, ethnicities, ages, and both genders. Study participants received course credit for participation in the study. Students who elected to not participate had the option to complete an assignment provided by the course instructor for credit. The total number of possible participants were one hundred and forty-four based on the class capacity for all course sections.

### **Data Collection Procedure**

Prior to collecting data, permission to conduct the research was obtained from the Old Dominion University Institutional Review Board (IRB). Each participant received a copy of the IRB permission to conduct research. Participants signed a consent form stating they voluntarily consent to participate in the study prior to the start of data collection.

Data was collected during a five-day period. On the first day of data collection, the researcher met with all classes that were included in the study. At that time any students that consented to participate in the study were asked to participate in a brief

orientation. During the orientation all volunteers received a packet with an informed consent document, IRB permission to conduct research letter, and instructions on how to access the data collection site. Each volunteer received a unique user identification number that was known only by the participant and the researcher. All volunteers must complete the informed consent and then received their log in information. After completion of all paper work the volunteers are reminded to log into the data collection site to complete the first day of data collection prior to midnight. Upon their first log in participants were randomly assigned to one of three conditions: emotional disclosure experimental group, factual disclosure experimental group, and the control group. Participation in the study was for three days. The writing groups wrote for 15 minutes per day. The emotional experimental group wrote about their emotions and feelings about a negative or stressful event while a student. The factual disclosure group wrote about their academic goals or plans. The control group did not write. All groups completed pre and post test measures. At the first log in all participants completed a demographic survey and four measures: The PILL, MAACL-R, GSE, and SCM. The two experimental groups wrote based on the prompt provided. The control group exited after completion of the measures. At the conclusion of 15 minutes the writing assignment stopped accepting input and the participant exited the site. A reminder email was sent out to participants in the experimental group reminding them to log on for the second day of data collection. On the second day of the study all participants in the experimental groups logged into the data collection site and completed a 15- minute written assignment according to the same prompt as day one. A reminder email was sent out to all participants reminding them to log in for the third day of data collection. On the third

day of the study, all participants logged in to the data collection site. The two experimental groups will completed the final 15-minute expressive writing assignment and post measures. The control group completed post measures. Only study participants in the experimental groups and control group that completed all three days of study assignments were included in the analysis of data.

### Experimental Groups

Experimental Group One. Participants assigned to this condition were given a written task that is a variation of the protocol suggested by Pennebaker (1994) in “Some Suggestions for Running a Confession Study.” The participants were provided the following instructions:

The writing exercise you will participate in for the next three days will focus on your thoughts and feelings about your experiences as a student. Do not be concerned about spelling, grammar or sentence structure. Each days writing exercise will last for 15 minutes. All of the writing were confidential.

Instructions for Day 1: In your writing, share your deepest thoughts and feelings about your experiences as a student. Specifically, we would like to know about stressful and negative experiences and/or recurring problems related to your academics, instructor relationship, your academic ability, or any ongoing difficulties that have affected you as a student. This can be a single event or a series of events, or ongoing problems. Please write about how you felt and what affects these events had or are having on you. In addition to discussing the facts of the events, discuss your deepest thoughts and feelings related to these occurrences. You may continue to write until the site stops accepting input.

Instructions for Day 2: Today, we want you to continue to share your deepest thoughts and feelings about your experiences as a student. It can be the same topic that you wrote about yesterday or it could be something different. Again, we would like to know about stressful and negative experiences and/or recurring problems related to your academics, instructor relationships, and your academic ability, or any ongoing difficulties that have affected you. This can be a single event or a series of events, or ongoing problems. Please write about how you felt and what affects these events had or are having on you. In addition to discussing the facts of the events, discuss your deepest thoughts and feelings related to these occurrences. You may continue to write until the site stops accepting input. Instructions for Day 3: Today is the last day. Continue to share your deepest thoughts and feelings about your experiences as a student. Please remember, we would like to know about stressful and negative experiences and/or recurring problems related to your academic experience, an instructor, your academic ability, or any ongoing difficulties that have affected you. This can be a single event or a series of events, or ongoing problems. Please write about how you felt and what affects these events had or are having on you. In addition to discussing the facts of the events, discuss your deepest thoughts and feelings related to these occurrences. Remember that this is the last day and so you might want to wrap everything up. You may continue to write until the site stops accepting input.

Experimental Group Two. Participants assigned to this condition were given a written task that is a variation of the protocol used by Lumley and Provenzano (2003) in their study on managing stress through written emotional disclosure. The participants were given the following instructions:

The writing exercise you will participate in for the next 3 days will focus on academic and career goal setting. During each of the 3 days you will write about your goals and plans to achieve these goals. When writing about your goals and plans be as objective as possible. Write only about your goals and plans to achieve these goals. Avoid writing about your feelings, concerns, worries or problems associated with the stated goals and goal achievement plan. Attempt to leave out opinions and attitudes. Your task is to only state specific goals and specific plans to accomplish these goals. All of the writing were confidential. Do not be concerned about spelling, grammar or sentence structure. Each day's writing exercise will last for 15 minutes. You may continue to write until the site stops excepting input.

Instructions for Day 1: Write about your goals for the remainder of the semester and your plan to achieve these goals. Write only about your goals and plans to achieve these goals. Avoid writing about your feelings, concerns, worries or problems associated with the stated goals and goal achievement plan. Attempt to leave out opinions and attitudes. Your task is only to state specific goals and specific plans to accomplish these goals.

Instructions for Day 2: Write about your goals related to completing your degree program and your plan to achieve these goals. Write only about your goals and plans to achieve these goals. Avoid writing about your feelings, concerns, worries or problems associated with the stated goals and goal achievement plan. Attempt to leave out opinions and attitudes. Your task is to state specific goals and specific plans to accomplish these goals.

Instructions for Day 3: Write about your career goals for the next five years and your plan to achieve these goals. Write only about your goals and plans to achieve these goals. Avoid writing about your feelings, concerns, worries or problems associated with the stated goals and goal achievement plan. Attempt to leave out opinions and attitudes. Your task is only to state specific goals and specific plans to accomplish these goals.

Control Group. Participants assigned to this condition were administered the demographic survey and four measures. Participants assigned to this condition did not do any writing outside of completing the measures and demographic survey. The participants were given the following instructions:

Instructions for Day 1: Complete the following measures. All information provided were confidential. The approximate time needed to complete the measures is approximately 15 minutes. You will not be required to log into this site until day three of the study. You will receive an email on day two of the study reminding you to log in. Instructions for Day 3: Complete the following measures. The approximate time needed to complete the measures is approximately 15 minutes.

### **Instrumentation**

There were four instruments used in this study. The instruments included the Pennebaker Inventory of Limbic Languidness (PILL; Pennebaker, 1982), The Multiple Affect Adjective Checklist Revised (MAACL; Zuckerman & Lubin, 1988), The General Self-efficacy Scale (GSE; Jerusalem & Schwarzer, 1981), and The Source Credibility Measure (McCroskey & Teven, 1999).



*Pennebaker Inventory of Limbic Languidness.* The PILL is a 54-item measure of common physical symptoms associated with stress and complaints and used to assess general physical symptoms. Study participants are asked to rate the frequency of experiencing specific physical symptoms, using a 5-point Likert-type scale ranging from 1 (have never or almost never experienced the symptom) to 5 (experienced more than once a week.) Higher scores generally reflect more severe levels of physical symptomatology (Pennebaker, 1982). The Cronbach alpha range is .88 to .91

*Multiple Affect Adjective Check List-Revised.* The MAACL-R, assesses affective mood state (Lubin & Zuckerman, 1999) It is a self report measure that consists of 132 adjectives that refer to report of current mood. The measure designed for a reading level of sixth-grade requires approximately five minutes to complete. The MAACL-R has five scales (anxiety, hostility, depression, positive affect, and sensation seeking) that contribute to two constructs (dysphoria and positive affect and sensation seeking). Raw scores for anxiety, hostility and depression are combined to form the dysphoria composite factor. Raw scores for positive affect and sensation seeking form a composite score for, Positive Affect-Sensation Seeking(PASS; Lubin & Zuckerman, 1999) The cronbach alpha internal consistency ranges from .81 to .95 for dysphoria and .88 to .94 for PASS(Lubin & Zuckerman, 1999).

*General Self-Efficacy Scale.* The GSE assesses a general sense of perceived self-efficacy with the aim in mind to predict coping with daily hassles as well as adaption after experiencing all kinds of stressful life events (Jerusalem & Schwarzer, 1981). The construct of perceived self-efficacy reflects an optimistic self belief. This is the belief that one can perform a novel or difficult tasks, or cope with adversity in various domains

(Schwarzer, 1992) The GSE consists of 10 items. It normally takes four minutes on average to administer. Responses are made on a 4-point scale. The responses are summed to yield a composite score (Jerusalem & Schwarzer, 1981). In samples from 23 nations, Cronbach's alphas ranged from .76 to .90, with the majority in the high 80's. The scale is unidimensional (Jerusalem & Schwarzer, 1981).

*Source Credibility Measure.* To measure student perception of instructor McCroskey and Teven's Source Credibility Measure (SCM) were completed by study participants. The SCM is composed of three constructs: competence, character, and caring. The 18 item measure is constructed using Snider & Osgood's (1969) semantic differential technique. Each construct is measured using six bipolar scales with a 7 point Likert-type scale. McCroskey and Teven (1999) report that the development of the SCM utilized oblique factor analysis, which generated correlated dimensions. The Cronbach alpha range is between .80 and .94.

### **Data Analysis**

*Data Analysis.* Data were analyzed using Statistical Package for the Social Sciences 17.0. Descriptive and Inferential statistical analysis were used to examine collected data. The independent variable is expressive writing and dependent variables are stress, mood, perceived self-efficacy and, perception of instructor. The demographic data were reported as frequencies and were analyzed to determine significant differences between and within the experimental groups and the control group. Preliminary checks were conducted to determine any violations of the assumptions of normality, linearity, homogeneity of variance, homogeneity of regression slopes, and

reliable measurement of the covariate. A one-way between groups analysis of covariance were conducted to compare the effectiveness of the independent variable expressive writing, and the posttest scores of the dependent variables stress as measured by the PILL, mood as measured by summary scale DYS and PASS on MAACL-R, perceived self-efficacy as measured by the GSE and perception of instructor as measured by SCM. The pretest scores for the dependent variables stress, mood, perceived self-efficacy and perception of instructor were used as the covariate in this analysis. Dimitrov and Rumrill (2003) point to the significance of the covariate in this design. "The purpose of using the pretest scores as a covariate in ANCOVA with a pretest-posttest design is to (a) reduce the error variance and (b) eliminate systematic bias (p.161)."

## CHAPTER IV: RESULTS

Chapter 4 presents the results from this study. The results are presented in three sections. The first section contains an examination of the demographics of the study participants. The second section contains the results of hypothesis testing and finally a summary of the main findings from this study

### Methodology Summary

The purpose of this study was to examine the effects of expressive writing on stress, mood, self-efficacy, and perception of instructor with in a sample of undergraduate human services students. The measures used in this study included (1) *The Pennebaker Inventory of Limbic Languidness (PILL)*, which measures the physical symptoms associated with stress. (2) *The Multiple Affect Adjective Checklist-Revised (MAACL-R)*, which measures anxiety, depression, and hostility using three sub scales and two composite scores. (3) *The General Self-Efficacy Scale (GSE)*, which measures self-beliefs about the ability to cope with the demands of an individual's life. (4) The Source Credibility Measure (SCM), which measures perception of instructor's competence, caring and trustworthiness. This study attempted to determine if the dependent variables stress, mood, perception of self-efficacy, and perception of instructor would be affected by implementing the independent variable, Pennebaker's expressive writing paradigm. Study participants were randomly assigned to one of three groups: the emotional disclosure experimental group, the factual disclosure experimental group and the non-writing control group. The study was conducted using a pretest- posttest control group design. Permission to conduct the research study was obtained from the Old

Dominion University Institutional Review Board (IRB). Each participant received a copy of the IRB permission to conduct research. Prior to the start of data collection, participants signed a consent form stating they voluntarily consented to participate in the study. All data was collect via a Black board interface over three consecutive days. Each participant was assigned a random user identification number. This identification number was used to login and route the participant to the appropriate prompt and kept the participants' pre and post test scores and writing samples associated with the identification number. The writing samples were collected but were not examined for content.

The experimental writing groups' wrote write for 15 minutes per day and the control group participated in the pretest and posttest measures only. The two experimental groups wrote essays based on the prompts provided. The emotional disclosure experimental group wrote about their emotions and feelings about an experience and/or recurring problems related to their academics, instructor relationship, their academic ability, or any ongoing difficulties that affected them during their time as a college student. The factual disclosure group wrote about their academic goals or plans. The control group did not write. All groups completed pretest and posttest measures. On the first day of the study, all participants completed a demographic survey and completed four measures: The PILL, The MAACL-R, The GSE, and The SCM. The control group completed the pretest measure only. On the second day of the study participants in the experimental groups logged into the data collection site and completed a 15- minute written assignment according to the same prompt as day one. On the third day of the study, all participants logged into the data collection site, the two experimental groups

completed the final 15-minute expressive writing assignment and posttest measures. The control group completed post measures only. Study participants in the experimental groups and control group that completed all three days of study assignments were included in the analysis of data. Prior to conducting analysis the data were reviewed for irregularities such as missing or incomplete data. For the Pennebaker Inventory of Limbic Languidness (Pennebaker, 1982) the measure was revised to include only 20 of the 54 items. Thus, the scoring quantities have decreased versus the unrevised PILL. The Source Credibility Measure required recoding of nine items and scores on certain items were summed to derive at three separate scores. The next section of this chapter will describe the demographics, source, selection and the process to exclude participants in the study.

### **Demographics**

Convenience sampling was used to obtain study participants. Participants were recruited from five sections of undergraduate courses in the Human Services Program. Two doctoral level professors instructed the classes. One instructor was Black/African American and one instructor was White/Caucasian. Recruitment in the classroom yielded 57 individuals that consented to participate in the study. Of the 57, only 32 (56%) completed all study measures and submitted writing samples. Prior to starting the study, each participant completed a demographic questionnaire, which asked the following questions: (1) Age, (2) Research ID, (3) Experimental Group Assignment, (4) Race/Ethnicity, (5) Gender, and (6) Class Standing.

Analyses were conducted to evaluate if there were pre-existing differences among the three groups in Race/Ethnicity, Gender, and Age. A breakdown by race/ethnicity showed that 50% (N=16) were African-American/Black, 47% (N=15) Caucasian/White, and 3% (N=1) as multiracial. The majority (97%, N = 31) were females with 3% (N=1) identified as male. The age groups ranged for 81% (N =26) in the 18 – 23 age group, 16% (N=5) in the 24 – 29 age group, and 3 % (N=1) in the 30 – 35 age group. Most were in the third and fourth year of college (37.5%, 41%), with 22% as either first or second year standing. Analyses were conducted to determine if there were significant differences between the three groups on the demographic variables. A chi-square analysis found no significant difference for race/ethnicity (chi-square = 5.94, 4, N=32); gender (chi-square = 2.27, 2, N=32); and age group (chi-square = 2.4, 4, N=32).

### **Findings**

This study investigated the following research questions:

RQ1. What is the effect of expressive writing on perceived stress in a sample of undergraduate human services students?

RQ2. What is the effect of expressive writing on mood in a sample of undergraduate human services students?

RQ3. What is the effect of expressive writing on perceived self-efficacy in a sample of undergraduate human services students?

RQ4. What is the effect of expressive writing on perception of instructor in a sample of undergraduate human services students?

### Emotional Disclosure Experimental Group Pre-Test Results

To ensure that no significant initial group differences existed among the emotional disclosure group, factual disclosure group, and the control group between pretest and posttest measures for the dependent variables stress, mood, self-efficacy, and perception of instructor paired sample t-test were conducted.

Stress. A paired sample t-test was conducted to compare if there was a significant difference between the pretest and posttest scores for the emotional disclosure experimental group on the Pennebaker Inventory of Limbic Languidness. The results of the paired sample t-test indicate there was no significant difference between the pretest PILL score ( $M = 10.40$ ,  $SD = 4.99$ ) and the posttest PILL score ( $M = 9.60$ ,  $SD = 5.02$ );  $t(9) = 1.04$ ,  $p < .327$  (two-tailed). The mean decrease in the PILL score was 0.8. Scores on the unmodified PILL can range from 0 to 216, the mean score is 59 with the standard deviation of 25. For the purpose of this study the PILL was modified and scores achieved with the modified PILL are not comparable with the norm sample.

Mood. A paired sample t-test was conducted to evaluate if there was a significant difference between the pretest scores and posttest scores for the emotional disclosure experimental group on the MAACL-R sub scales for Anxiety, Depression, Hostility, Sensation Seeking, Positive Affect, Dysphoria Composite, and PASS Composite scores. The results are presented in Table 1. There was no significant difference between the pretest score on the Anxiety scale ( $M = 50.10$ ,  $SD = 8.32$ ) and the posttest scores on the Anxiety scale ( $M = 45.70$ ,  $SD = 85.8$ ),  $t = 2.14$ ,  $p < .061$  (two-tailed). The mean decrease in the Anxiety scale score was 4.4 (with a 95% confidence interval



ranging from -.251 to 9.05). There was not a significant difference between the Depression scale pretest score ( $M = 46.80$ ,  $SD = 6.89$ ) and the Depression scale posttest score ( $M = 48.00$ ,  $SD = 8.91$ ),  $t = .507$ ,  $p < .624$  (two-tailed). The mean increase in the Depression scale score was 1.2 (with a 95% confidence interval ranging from -6.55 to 4.151). There was not a significant difference between the Hostility scale pretest score ( $M = 51.10$ ,  $SD = 12.6$ ) and the Hostility scale posttest score ( $M = 52.10$ ,  $SD = 13.85$ ),  $t = -.299$ ,  $p < .772$  (two-tailed). The mean increase was 1.0 (with a 95% confidence interval ranging from -8.578 to 6.578). There was not a significant difference between the Positive Affect pretest score ( $M = 55.20$ ,  $SD = 7.07$ ) and the Positive Affect posttest score ( $M = 59.70$ ,  $SD = 10.4$ ),  $t = 1.16$ ,  $p < .276$  (two-tailed). The mean increase in Positive Affect scores was 4.5 (with a confidence interval ranging from -13.3 to 4.3). There was not a significant difference between the Sensation Seeking scale pretest score ( $M = 75.30$ ,  $SD = 18.6$ ) and the Sensation Seeking scale posttest score ( $M = 72.40$ ,  $SD = 15.7$ ),  $t = .474$ ,  $p < .647$  (two-tailed). The mean decrease in the Sensation Seeking scale scores was 2.9 (with a 95% confidence interval ranging from -11 to 16.7). There was not a significant difference between the Dysphoria Composite pretest score ( $M = 52.50$ ,  $SD = 12.19$ ) and the Dysphoria Composite posttest score ( $M = 47.5$ ,  $SD = 9.8$ ),  $t = 1.68$ ,  $p < .127$  (two-tailed). The mean decrease in the Dysphoria composite score is 5 (with a 95% confidence interval ranging from -1.736 to 11.736). There was not a significant difference between the Pass Composite pretest score ( $M = 55.80$ ,  $SD = 5.7$ ) and the Pass Composite posttest score ( $M = 56.70$ ,  $SD = 7.4$ ),  $t = -.331$ ,  $p < .748$  (two-tailed). The mean increase in PASS score is .09 (with a 95% confidence interval ranging from -7.049 to 5.249). Mean scores

were within average range for all scales. The mean scores ranged from 46.8 to 75.3 compared to the norm sample range of 28 to 94.

Self-Efficacy. A paired sample t-test was conducted to evaluate if there was a significant difference between the pretest score on the General Self-Efficacy scale and the posttest score on the General Self-efficacy scale for the emotional disclosure experimental group (Table 1). The results of the paired sample t-test indicate that there was not a significant difference between the pretest scores on the General Self-Efficacy Scale ( $M = 30.60$ ,  $SD = 2.459$ ) and the posttest scores on the General Self-Efficacy Scale ( $M = 30.90$ ,  $SD = 4.095$ ),  $t = -232$ ,  $p < .822$  (two-tailed). The mean increase in the GSE score was 0.3 (with a 95% confidence interval ranging from 3.22 to 2.62). The mean scores ranged from 30.60 to 30.90 compared to the norm sample range mean of 29.48

Instructor Perception. A paired sample t-test was conducted to evaluate if there was a significant difference between the pretest and posttest scores for the emotional disclosure experimental group on the Source Credibility Measure sub scales, which include the Competence Scale, the Caring Scale, and the Trustworthiness Scale (Table 1). The results of the paired sample t-test indicate there was not a significant difference between the pretest score of the Competence Scale ( $M = 34.2$ ,  $SD = 8.28$ ) and the posttest score of the Competence Scale ( $M = 33.70$ ,  $SD = 8.80$ ),  $t = .469$ ,  $p > .651$  (two-tailed). The mean decrease in the Competence Scale score was 0.5 (with a 95% confidence interval ranging from -1.914 to 2.914). The results of the paired sample t-test indicate there was not a significant difference between the pretest score of the Caring Scale ( $M = 29.00$ ,  $SD = 12.70$ ) and the posttest scores on the Caring Scale ( $M = 29.30$ ,  $SD = 12.56$ ),  $t(9) = -.282$ ,  $p > .785$  (two-tailed). The mean increase in the Caring Scale score was 0.3 (with a 95%

confidence interval ranging from -2.71 to 2.11). The results of the paired sample t-tests indicate there was not a significant difference between the pretest score of the Trustworthiness Scale ( $M= 30.20$ ,  $SD= 7.30$ ) and the posttest score of the Trustworthiness Scale ( $M= 29.00$ ,  $SD= 6.83$ ),  $t(9)= 2.03$ ,  $p> .074$  (two-tailed). The mean decrease in the Trustworthiness scores was 1.2 (with a 95% confidence interval ranging from -.140 to 2.54). The mean scores for the competence scale ranged from 33.70 to 34.2 compared to the norm sample mean of 30.6. The mean scores for the caring scale ranged from 29.00 to 29.30 compared to the norm sample mean of 24.7. The mean scores for the trustworthiness scale ranged from 29.00 to 30.20 compared to the norm sample mean of 28.5.

### **Summary**

Paired t-tests did not reveal any significant differences on any of the measures. The Anxiety sub-scale on the MAACL-R and the Trustworthiness scale for the Source Credibility Scale approached significance.

### **Factual Disclosure Experimental Group Pre-Test Results**

Stress. A paired sample t-test was conducted to compare if there was a significant difference between the pretest and posttest scores for the factual disclosure experimental group on the Pennebaker Inventory of Limbic Languidness. The results of the paired sample t-test indicate there was no significant difference between the pretest PILL score ( $M= 6.91$ ,  $SD= 5.11$ ) and the posttest PILL score ( $M= 6.73$ ,  $SD= 5.59$ );  $t(10)=.235$ ,  $p< .819$ (two-tailed). The mean decrease in the PILL score was .18 (with a 95% confidence interval ranging from -1.539 to 1.903).

Mood. A paired sample t-test was conducted to evaluate if there was a significant difference between the pretest scores and posttest scores for the factual disclosure experimental group on the MAACL-R sub scales for Anxiety, Depression, Hostility, Sensation Seeking, Positive Affect, Dysphoria Composite, and PASS Composite scores. The results are presented in Table 2. There was no significant difference between the pretest score on the Anxiety scale ( $M = 47.27$ ,  $SD = 13.4$ ) and the posttest scores on the Anxiety scale ( $M = 49.45$ ,  $SD = 14.2$ ),  $t = -.526$ ,  $p < .610$  (two-tailed). The mean increase in the Anxiety scale score was 2.1 (with a 95% confidence interval ranging from -11.427 to 7.063). There was not a significant difference between the Depression scale pretest score ( $M = 43.73$ ,  $SD = 7.19$ ) and the Depression scale posttest score ( $M = 41.27$ ,  $SD = 5.60$ ),  $t = 1.15$ ,  $p < .276$  (two-tailed). The mean decrease in the Depression scale score was 2.46 (with a 95% confidence interval ranging from -2.290 to 7.199). There was not a significant difference between the Hostility scale pretest score ( $M = 46.55$ ,  $SD = 7.10$ ) and the Hostility scale posttest score ( $M = 51.00$ ,  $SD = 18.38$ ),  $t(10) = .236$ ,  $p < .236$  (two-tailed). The mean increase was 4.45 (with a 95% confidence interval ranging from -12.33 to 3.42). There was not a significant difference between the Positive Affect pretest score ( $M = 55.18$ ,  $SD = 7.85$ ) and the Positive Affect posttest score ( $M = 55.82$ ,  $SD = 6.71$ ),  $t = -.232$ ,  $p < .821$  (two-tailed). The mean increase in Positive Affect scores was .64 (with a confidence interval ranging from -6.74 to 5.47). There was not a significant difference between the Sensation Seeking scale pretest score ( $M = 69.6$ ,  $SD = 8.1$ ) and the Sensation Seeking scale posttest score ( $M = 71.2$ ,  $SD = 13.5$ ),  $t = -.346$ ,  $p < .737$  (two-tailed). The mean increase in the Sensation Seeking scale scores was 1.54 (with a 95% confidence interval ranging from -11.50 to 8.41). There was not a significant difference between the

Dysphoria Composite pretest score ( $M = 48.09$ ,  $SD = 13.7$ ) and the Dysphoria Composite posttest score ( $M = 48.7$ ,  $SD = 16.1$ ),  $t = -.240$ ,  $p < .816$  (two-tailed). The mean decrease in the Dysphoria composite score is 0.64 (with a 95% confidence interval ranging from -6.56 to 5.29). There was not a significant difference between the Pass Composite pretest score ( $M = 57.73$ ,  $SD = 10.03$ ) and the Pass Composite posttest score ( $M = 57.7$ ,  $SD = 10.0$ )  $t = .737$ ,  $p < .478$  (two-tailed). The mean increase in PASS score is 3.28 (with a 95% confidence interval ranging from -6.62 to 13.16).

**Self-Efficacy.** A paired sample t-test was conducted to evaluate if there was a significant difference between the pretest score on the General Self-Efficacy scale and the posttest score on the General Self-efficacy scale for the factual disclosure experimental group (Table 2). The results of the paired sample t-test indicate that there was not a significant difference between the pretest scores on the General Self-Efficacy Scale ( $M = 30.00$ ,  $SD = 4.59$ ) and the posttest scores on the General Self-Efficacy Scale ( $M = 30.64$ ,  $SD = 4.93$ ),  $t = -1.55$ ,  $p < .152$  (two-tailed). The mean increase in the GSE score was 0.64 (with a 95% confidence interval ranging from -1.55 to .279).

**Instructor Perception.** A paired sample t-test was conducted to evaluate if there was a significant difference between the pretest and posttest scores for the factual disclosure experimental group on the Source Credibility Measure sub scales, which include the Competence Scale, the Caring Scale, and the Trustworthiness Scale. The results of the paired sample t-test indicate there was not a significant difference between the pretest score of the Competence Scale ( $M = 37.55$ ,  $SD = 5.70$ ) and the posttest score of the Competence Scale ( $M = 36.36$ ,  $SD = 5.01$ ),  $t = .920$ ,  $p < .379$  (two-tailed). The mean decrease in the Competence Scale score was 1.19 (with a 95% confidence interval

ranging from -1.68 to 4.05). The results of the paired sample t-test indicate there was not a significant difference between the pretest score of the Caring Scale ( $M = 33.64$ ,  $SD = 6.27$ ) and the posttest scores on the Caring Scale ( $M = 32.27$ ,  $SD = 4.17$ ),  $t = 1.261$ ,  $p > .236$  (two-tailed). The mean decrease in the Caring Scale score was 1.37 (with a 95% confidence interval ranging from -1.05 to 3.77). The results of the paired sample t-tests indicate there was not a significant difference between the pretest score of the Trustworthiness Scale ( $M = 33.09$ ,  $SD = 5.45$ ) and the posttest score of the Trustworthiness Scale ( $M = 32.45$ ,  $SD = 6.49$ ),  $t = .502$ ,  $p < .626$  (two-tailed). The mean decrease in the Trustworthiness scores was 0.64 (with a 95% confidence interval ranging from -.2.19 to 3.46).

### **Summary**

Paired t-tests did not reveal any significant differences on any of the measures for the factual disclosure experimental group. Mean raw scores were within average range for all scales. The pretest mean scores ranged from 43.7 to 69.6 and the posttest mean score ranged from 41.3 to 55.8 as compared to the norm sample range of 28 to 94.

### **Non-Writing Control Group Pre-Test Results**

*Stress.* A paired sample t-test was conducted to compare if there was a significant difference between the pretest and posttest scores for the Non-writing control experimental group on the Pennebaker Inventory of Limbic Languidness. The results of the paired sample t-test indicate there is no significant difference between the pretest scores on the PILL ( $M = 10.00$ ,  $SD = 4.60$ ) and the posttest scores on the PILL ( $M = 10.45$ ,  $SD = 5.83$ ),  $t = -.524$ ,  $p > .612$  (two-tailed). The mean decrease in the PILL score

was -0.45 (with a 95% confidence interval ranging from -2.39 to 1.48). The results are presented in Table 3.

*Mood.* A paired sample t-test was conducted to evaluate if there was a significant difference between the pretest scores and posttest scores for Non-writing control experimental group on the MAACL-R sub scales for Anxiety, Depression, Hostility, Sensation Seeking, Positive Affect, Dysphoria composite, and PASS composite scores. (Table 3). There was no significant difference between the pretest score on Anxiety scale ( $M = 55.09$ ,  $SD = 15.488$ ) and the posttest scores on the Anxiety scale ( $M = 54.91$ ,  $SD = 15.404$ ),  $t = -.066$ ,  $p > .949$  (two-tailed). The mean decrease in the Anxiety scale score was 0.18 (with a 95% confidence interval ranging from -5.95 to 6.31). There was no significant difference between the Depression scale pretest score ( $M = 47.27$ ,  $SD = 8.40$ ) and Depression posttest score ( $M = 49.00$ ,  $SD = 11.61$ )  $t = -.662$ ,  $p > .523$  (two-tailed). The mean increase was 1.73 (with a 95% confidence interval ranging from -7.54 to 4.08). There was no significant difference between the Hostility scale pretest score ( $M = 50.27$ ,  $SD = 8.13$ ) and the posttest Hostility scale score ( $M = 54.09$ ,  $SD = 12.15$ ),  $t = -1.22$ ,  $p > .249$  (two-tailed). The mean increase was 3.8 (with a 95% confidence interval ranging from -10.77 to 3.14). There was no significant difference between the pretest Positive Affect scale score ( $M = 57.6$ ,  $SD = 9.62$ ) and the posttest Positive Affect scale score ( $M = 55.9$ ,  $SD = 9.86$ ),  $t = .492$ ,  $p > .634$  (two-tailed). The mean decrease in PA scale score was 1.64 (with a confidence interval ranging from -5.78 to 9.05). There was no significant difference between the Sensation Seeking scale pretest score ( $M = 79.00$ ,  $SD = 18.07$ ) and posttest Sensation Seeking posttest ( $M = 79.27$ ,  $SD = 16.04$ ),  $t = -.051$ ,  $p > .960$  (two-tailed). The mean increase in Sensation Seeking scale scores was 0.27 (with

a 95% confidence interval ranging from -12.22 to 11.68). There was no significant difference between the Dysphoria composite pretest score ( $M = 45.18$ ,  $SD = 15.7$ ) and posttest Dysphoria composite posttest ( $M = 53.82$ ,  $SD = 18.08$ ),  $t = -1.62$ ,  $p > .136$  (two-tailed). The mean increase in Dysphoria composite score is 8.64 (with a 95% confidence interval ranging from -20.49 to 3.22). There was no significant difference between the PASS Composite pretest score ( $M = 59.91$ ,  $SD = 10.03$ ) and the PASS composite posttest score ( $M = 58.36$ ,  $SD = 8.72$ )  $t = .605$ ,  $p > .559$  (two-tailed). The mean decrease in PASS score was 1.55 (with a 95% confidence interval ranging from -4.15 to 7.24).

**Self-Efficacy.** A paired sample t-test was conducted to evaluate if there was a significant difference between the pretest scores on the General Self-Efficacy scale and the posttest scores on the General Self-Efficacy scale for the non-writing control experimental group (Table 3). The results of the paired t-test indicate that there was no significant difference between the General Self-Efficacy scale ( $M = 34.3$ ,  $SD = 3.66$ ) and the posttest scores on the General Self-Efficacy scale ( $M = 33.6$ ,  $SD = 3.26$ ),  $t = 1.08$ ,  $p > .308$  (two-tailed). The mean decrease in the GSE score was 0.63 (with a 95% confidence interval ranging from -.683 to 1.96).

**Instructor Perception.** A paired sample t-test was conducted to evaluate if there was a significant difference between the pretest and posttest scores on the sub scales of the Source Credibility Measure for the non-writing control experimental group. The Source Credibility Measure is comprised of the sub scales, Competence, Caring and Trustworthiness. The results are presented in (Table 3). The results of the paired t-test indicate there was not a significant difference between the pretest Competence Scale score ( $M = 36.09$ ,  $SD = 4.68$ ) and the posttest Competence Scale score ( $M = 36.00$ ,  $SD =$



6.77),  $t = .058$ ,  $p > .955$  (two-tailed). The mean decrease in the Competence Scale score was 0.09 (with a 95% confidence interval ranging from -3.41 to 3.59). There was not a significant difference between the pretest Caring Scale score ( $M = 33.9$ ,  $SD = 7.12$ ) and the posttest Caring Scale score ( $M = 34.4$ ,  $SD = 6.20$ ),  $t = -.374$ ,  $p > .716$  (two-tailed). The mean increase in the Caring Scale score was 0.45 (with a 95% confidence interval ranging from -3.17 to 2.26). There was not a significant difference between the pretest score on the Trustworthiness Scale score ( $M = 31.7$ ,  $SD = 3.61$ ) and the posttest Trustworthiness Scale score ( $M = 31.3$ ,  $SD = 3.66$ ),  $t = .349$ ,  $p > .734$  (two-tailed). The mean decrease in the Trustworthiness scores was 0.46 (with a 95% confidence interval ranging from -2.45 to 3.36).

### **Summary**

Paired t-tests did not reveal any significant differences on any of the measures. Mean raw scores were within average range for all scales. The pretest mean scores ranged from 45.2 to 79 and the posttest mean score ranged from 49 to 79.3 as compared to the norm sample range of 28 to 94. To determine if significant initial differences existed between the experimental groups and the control group mean scores on the dependent variables pretest measures, a one-way analysis of variance was conducted for each of the dependent variables.

### **Between Group Pre-Test Analysis**

A one-way (ANOVA) was conducted to determine if there was a significant difference between the three groups on the pre-test measures. Results indicate that there were no significant differences on the PILL ( $F = 1.6$ , 2, 29). Table 1 presents the results

for the three groups on the subscales on the MAACL-R. No significant differences were found for any of the scales.

<b>Table 1</b>					
<b>Analysis Of Variance Between Groups On MAACL-R Subscales</b>					
MAACL-R Scales		df	F	MEAN SQUARE	P
Anxiety Pre-Test	Between	2	1.036	172.114	.368
	Within	29		166.207	
Depression Pre-Test	Between	2	.710	40.378	.500
	Within	29		56.895	
Hostility Pre-Test	Between	2	.704	63.095	.503
	Within	29		89.649	
Sensation Seeking Pre-Test	Between	2	1.008	244.427	.377
	Within	29		242.436	
Positive Affect Pre-Test	Between	2	.292	20.018	.749
	Within	29		68.619	
DYS Composite Pre-Test	Between	2	.721	141.462	.495
	Within	29		196.243	
PASS Composite Pre-Test	Between	2	.560	44.405	.577
	Within	29		79.334	

A one-way (ANOVA) was conducted to determine if there was a significant difference between the three groups on the pre-test measures on the General Self-Efficacy Scale. The results found there was a significant difference among the three groups ( $F= 4.2, 2, 29$ ) with the control group scoring higher than did the other two groups. Table 2 presents the results.

**Table 2**

<b>Analysis Of Variance Between Groups On General Self-Efficacy Scale Pretest Score</b>				
General Self-Efficacy Scale		df	F	MEAN SQUARE
Pre-Test	Between Groups	2	4.24	58.318
	Within Groups	29		13.744
				<i>P</i>
				0.02

Post hoc analyses (Tukey HSD) indicated that there was a significant difference between the factual disclosure group ( $M = 30$ ,  $SD = 4.6$ ) and the control group,  $p < .30$ . No significant differences were found between emotional disclosure group ( $M = 30.6$ ,  $SD = 2.5$ ) and the control group ( $M = 34.2$  and  $SD = 3.7$ ) and emotional disclosure group ( $M = 30.6$ ,  $SD = 2.5$ ) and factual disclosure group ( $M = 30$ ,  $SD = 4.6$ ).

A one-way ANOVA was conducted to determine if there was a difference on the mean scores of the dependent variable perception of instructor as measured by the Source Credibility Measure sub scales: Competence, Caring, and the Trustworthiness. There was no significant differences found on Competence,  $F(2, 29) = .734$ ,  $p = .49$ . The results also indicate that there is no significant differences found on the Caring sub scale,  $F(2, 29) = .968$ ,  $p = .39$  and the Trustworthiness sub scale,  $F(2, 29) = .700$ ,  $p = .50$ . The results are presented in Table 3.

**Table 3**

<b>Analysis Of Variance Between Groups On The Source Credibility Measure</b>					
Source Credibility Measure Subscales		df	F	MEAN SQUARE	P
Instructor Competence Pretest	Between	2	.73	29.382	.48
	Within	29		40.043	.9
Instructor Caring Pretest	Between	2	.96	78.507	.392
	Within	29		81.085	
Instructor Trustworthiness Pretest	Between	2	.70	21.889	.505
	Within	29		31.265	

#### Between Group Posttest Analyses

A series of ANCOVAS were conducted using the pretest as covariates due to the significant differences found between the factual disclosure experimental group and the non-writing experimental group on the pretest measure of self-efficacy.

A one-way analysis of covariance (ANCOVA) was conducted using the pretest scores as covariates. Results indicate no significant difference between groups on the posttest results for the PILL  $F(2,29) = 1.6$ ,  $p = 0.21$ , partial eta squared = .039. The results of the ANCOVA are presented in Table 4.

**Table 4**

<b>Analysis Of Covariate Between Groups On The Posttest Pill Scores</b>						
	DF	MEAN SQUARE	F	SIG.	Partial eta squared	OBSERVED POWER
CORRECTED MODEL	3	253.633	35.188	.000	.790	1.00
PRE PILL GROUP	1	677.488	93.993	.000	.770	1.00
	2	4.111	.570	.572	.039	.135

A one-way ANCOVA was conducted to explore the effect of expressive writing on the MAACL-R sub scales for Anxiety, Depression, Hostility, Positive Affect, Sensation Seeking, Dysphoria, and PASS Composite, while controlling for the pretest scores. The pretest score on the MAACL-R sub scales was used as the covariate in this analysis. Results indicate that there were no significant differences among the three groups on the posttest score on the MAACL-R scale for Anxiety,  $F(2,29)= 1.6$ ,  $p= 0.21$ , partial eta squared = .077, posttest score on the Depression scale,  $F(2,29)= 1.5$ ,  $p= 0.24$ , partial eta squared = .097, posttest score on the Hostility scale,  $F(2,29)= .34$ ,  $p= 0.72$ , partial eta squared = .024, posttest score on the Positive Affect scale,  $F(2,29)= .72$ ,  $p= 0.50$ , partial eta squared = .049, posttest score on the Sensation Seeking scale,  $F(2, 29) = .46$ ,  $p= 0.64$ , partial eta squared = .032, posttest score on the Dysphoria scale,  $F(2, 29) = 2.5$ ,  $p= .10$ , partial eta squared = .150, and the posttest score on the PASS scale,  $F(2,29)= .64$ ,  $p= 0.54$ , partial eta squared = .044.

**Table 5**

**Analysis Of Covariance Between Groups On The Posttest General Self-Efficacy Scores**

GENERAL SELF-EFFICACY	DF	MEAN SQUARE	F	SIG.	PARTIAL ETA SQUARED	OBSERVED POWER
CORRECTED MODEL	3	119.943	16.8	.000	.643	1.000
PRE- SELF-EFFICACY	1	299.819	41.9	.000	.600	1.000
GROUP	2	1.101	.154	.858	.011	.071

A one-way analysis of covariance (ANCOVA) was conducted to explore the effect of expressive writing on self-efficacy as measured by the General Self-Efficacy

Scale, while controlling for the pretest scores. The pretest score on the GSE was used as the covariate in this analysis. The results indicated that there was not a significant difference among the three groups,  $F(2, 29) = .154$ ,  $p = .858$ , partial eta squared = .011 on the GSE. The results of the ANCOVA are presented in Table 5.

A one-way analysis of covariance (ANCOVA) was conducted to explore the effect of expressive writing on perception of instructor as measured by the Source Credibility Measure sub scales: Competence, Caring, and the Trustworthiness, while controlling for the pretest scores. The pretest score on the SCM was used as the covariate in this analysis. There was no significant differences found on Competence,  $F(2, 29) = .124$ ,  $p = .88$ , partial eta squared = .009. The results also indicate that there is no significant differences found on the Caring sub scale,  $F(2, 29) = .808$ ,  $p = .456$ , partial eta squared = .055 and the Trustworthiness sub scale,  $F(2, 29) = .282$ ,  $p = .76$ , partial eta squared = .055.

### **Additional Analyses**

Other data analyzed included a one-way ANOVA to explore the effects of expressive writing on the dependent variables, stress, mood, self-efficacy, and perception of instructor posttest scores and a two-way MANOVA was conducted to examine the relationship between participants' and instructors' ethnicity and their effect on perception of instructor as measured by the Source Credibility Measure. The experimental groups included the writing disclosure group compared to the non-writing group. The results indicate that there was no significant difference between the two groups on the posttest scores on all measures.

### **EFFECT OF PARTICIPANTS' AND INSTRUCTORS' ETHNICITY ON PERCEPTION OF INSTRUCTOR**

A two-way MANOVA was conducted to examine the relationship between participants' and instructors' ethnicity and their effect on perception of instructor as measured by the Source Credibility Measure subscales: Competence, Caring, and Trustworthiness. The MANOVA, Hotelling's Trace, indicated no significant difference for participants' ethnicity ( $p < .657$ ), but a significant difference for instructor's ethnicity ( $p < .001$ ). The interaction between participants and instructors' ethnicity was also significant ( $p < .036$ ). Post-Hoc analyses were conducted for the interaction.

### **INTERACTIONS BETWEEN PARTICIPANTS' AND INSTRUCTORS' ETHNICITY**

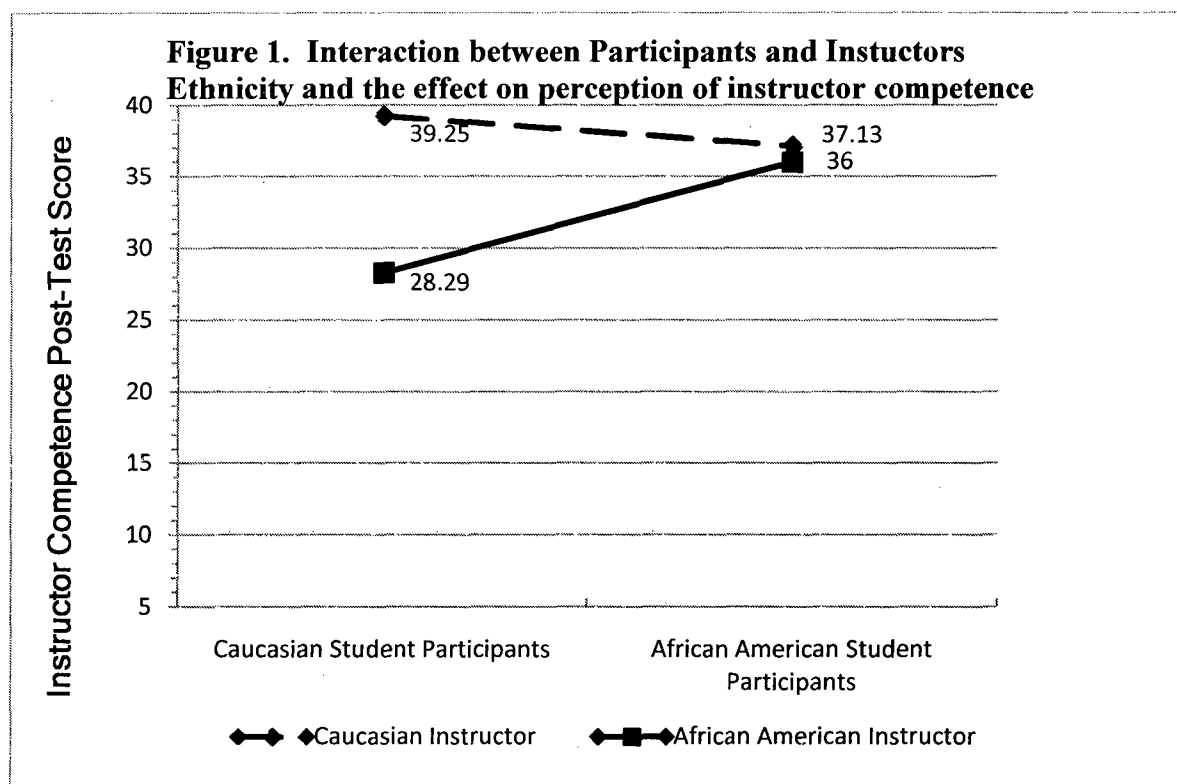
One-way ANOVAs regarding the interaction between participants' and instructors' ethnicity on each subscale of the Source Credibility Measure subscales were carried out. Findings indicated that the interaction related to the Competence Scale was significant,  $F(1,27) = 5.362$ ,  $p < .029$ . The interaction pertaining to the Caring Scale was also significant,  $F(1,27) = 8.928$ ,  $p < .006$ . However, no interaction was found regarding the Trustworthiness Scale,  $F(1,27) = 3.268$ ,  $p < .082$ . Simple effects analyses were conducted for the two subscales: Competence and Caring of the Source Credibility Measure in relationship to participants' and instructors' ethnicity. There was a significant interaction

### **SIGNIFICANT MAIN EFFECTS OF INSTRUCTORS' ETHNICITY**

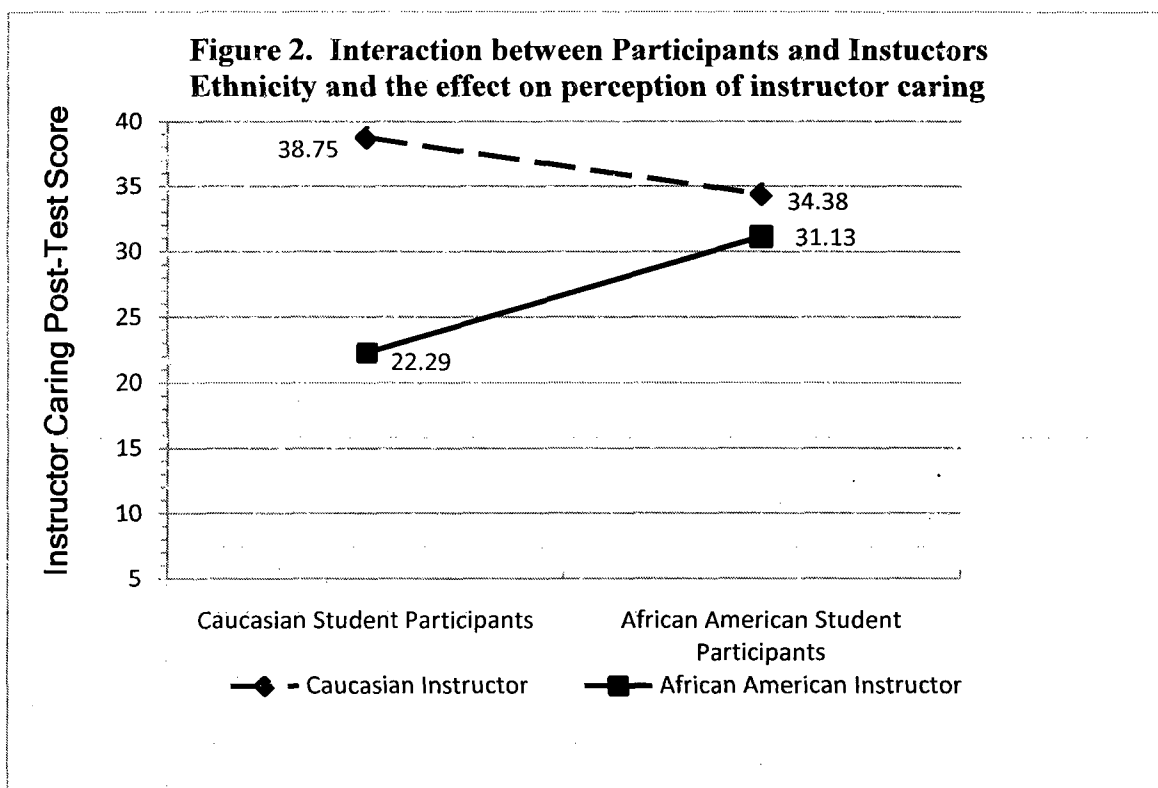
One-way ANOVAs regarding the main effect of instructors' ethnicity on each subscale of the Source Credibility Measure subscales was conducted. Findings indicated

that there was a main effect of instructor's ethnicity related to the Competence Scale,  $F(1,27) = 8.040, p < .009$ . Specifically, the Caucasian instructor's score for Competence ( $M = 38.2, SD = 1.5$ ) was significantly higher than the score for Competence assigned to the African-American instructor ( $M = 32.14, SD = 1.5$ ). There was also a main effect of instructor's ethnicity pertaining to the Caring Scale,  $F(1,27) = 19.873, p < .001$ .

Specifically, the Caucasian instructor's score for Caring ( $M = 36.6, SD = 1.5$ ) was significantly higher than the score for Caring assigned to the African-American instructor (Figure 2) ( $M = 26.7, SD = 1.5$ ). However, no main effect of instructor's ethnicity was found regarding Trustworthiness,  $F(1,27) = 4.010, p < .082$ .







### Summary

This chapter reported the results of this study by examining the analysis of the demographic questionnaire and the dependent variables, stress, mood, self-efficacy and perception of instructor. The results of the analysis of the demographic survey indicate there was no significant difference among the three groups on the categorical variables race/ethnicity, age, and gender. Within group, comparisons were conducted to evaluate if there was a significant difference between the pre-test and posttest scores on the dependent variable stress, mood, self-efficacy, and perception of instructor within each experimental group. The results of the paired t-test indicate there was no significant difference among the three groups on the pretest and posttest measures on the dependent variables stress, mood, self-efficacy, and perception of instructor. Between group comparisons were conducted to determine if there was a difference among the

experimental groups on the mean scores of the pretest. No significant difference was found on the pretest measures of stress, mood, and perception of instructor. However, there was a significant difference on the pretest measure of self-efficacy. The post hoc analyses indicate that the significant difference was between the factual disclosure group and the non-writing control group. Finally, a series of ANCOVAS were conducted to explore the effect of expressive writing on the posttest scores of the dependent variables stress, mood, self-efficacy, and perception of instructor, while controlling for the pretest scores. The pretest scores were used as covariates in the analysis. The results of the ANCOVAS indicate there was no significant difference among the three groups on the posttest scores on the dependent variables stress, mood, self-efficacy, and perception of instructor. Implications and findings are discussed in Chapter 5.

## **CHAPTER V: DISCUSSION**

The purpose of this study was to explore if emotional disclosure through expressive writing would have an effect on stress, mood, and perception of self-efficacy and instructor for undergraduate students majoring in human services. Chapter 1 of this study introduced the statement of the problem, the importance of the study and the conceptual framework of the study. Chapter 2 provided a review of the literature for the independent variable expressive writing and the dependent variables: stress, mood, self-efficacy, and perception of instructor. Chapter 3 presents the methodology of this study, which includes the research design, sample, data collection, and data analysis process. The study results are presented in Chapter 4. Chapter 5 presents a discussion of the study findings, conclusions, and implications.

### **Overview of Procedures**

The study was conducted using a Pretest-Posttest Control Group design. Convenience sampling was used to obtain study participants. The participants were recruited from five sections of undergraduate courses in the Human Services Program. Approximately 95 students were enrolled in the classes, and 57 (60 %) volunteered to participate. Volunteers would receive course credit for participation. Two doctoral level professors instructed the classes. One instructor was Black/African American and one instructor was White/Caucasian. Students that volunteered for the study participated in a brief orientation. During the orientation, all volunteers received a packet with an informed consent document, IRB permission to conduct research letter, and instructions on how to access the data collection site. Data were collected using a Blackboard web

based interface. Each participant received a unique user identification number known only by the participant and the researcher. All participants completed an informed consent document in order to receive their log in information. Upon their first log in participants were randomly assigned to one of three groups: the emotional disclosure experimental group, the factual disclosure experimental group, and the control group. Data were collected from each class section over three consecutive days. The two experimental groups wrote for 15 minutes each day based on the prompt provided. The emotional disclosure experimental group wrote about their emotions and feelings about a negative or stressful event they experience during their time as a student. The factual disclosure group wrote about their academic goals or plans. The control group did not write. All groups complete pre and post test measures. At the first log in all participants completed a demographic survey and completed four measures: The PILL, MAACL-R, GSE, and SCM. On the second day of the study all participants in the experimental groups logged in to the data collection site and completed a 15- minute written assignment according to the same prompt as day one. On the third day of the study, all participants logged in to the data collection site. The two experimental groups completed the final 15-minute expressive writing assignment and post measures. The control group completed post measures. Only study participants in the experimental groups and control group that completed all three days of study assignments were included in the analysis of data. Of the 57 students who volunteered to participate in the study, only 32 (56%) completed all study measures and submitted writing samples.

Study participants were comprised of 50% (N=16) African-American/Black, 47% (N=15) Caucasian/White, and 3% (N=1) as multiracial. The majority (97%, N = 31) were

females with 3% (N=1) identified as male. The participants identified their age according to ranges. The majority of participants 81% (N =26) were in the age group 18 – 23, 16% (N=5) were in the 24 – 29 age group, and 3 % (N=1) were in the 30 – 35 age group. Most were in the third and fourth year of college (37.5%, 41%), with 22% as either first or second year standing.

### **Findings**

This study explored four research questions. The results of the detailed statistical analysis of those four questions are examined in this section. The analytical procedure for each question were presented in this section and the results of the analysis upon the individual hypothesis formulated for each question were presented in the following section.

#### **Research Question 1**

Research question one stated, "What is the effect of expressive writing on perceived stress in a sample of undergraduate human services students?"

#### **Findings**

The results of the paired sample t-test indicate there was no significant difference between the pretest PILL score (M= 10.40, SD= 4.99) and the posttest PILL score (M= 9.60, SD= 5.02);  $t(9)=1.04$ ,  $p< .327$  (two-tailed) for the emotional disclosure experimental group on this measure. The scores demonstrated a reduction of perceived stress but did not reach a level of statistical significance. The results of the paired sample t-test for the factual disclosure experimental group on pretest and posttest showed no significance difference between the pretest PILL score (M= 6.91, SD= 5.11) and the

posttest PILL score ( $M = 6.73$ ,  $SD = 5.59$ );  $t(10) = .235$ ,  $p < .819$  (two-tailed) for the factual disclosure experimental group on this measure. The scores demonstrated a reduction of perceived stress but did not reach a level of statistical significance.

The results of the paired sample  $t$ -test for the control group on pretest and posttest showed no significant difference between the pretest PILL ( $M = 10.00$ ,  $SD = 4.60$ ) and the posttest PILL ( $M = 10.45$ ,  $SD = 5.83$ ),  $t = -.524$ ,  $p > .612$  (two-tailed) for the non-writing control group on this measure. The scores demonstrated an increase of perceived stress but did not reach a level of statistical significance.

A one-way analysis of variance (ANOVA) was conducted to determine if there was significant a difference between the three groups on the pre-test scores of stress as measured by the PILL showed no significant differences on the pretest measure of stress at the  $p < .05$  level for the three groups  $F(2, 29) = 1.63$ ,  $p = .213$ .

A one-way analysis of covariance was conducted to compare the effects of expressive writing on the experimental groups and non-writing group, on the posttest PILL score using the pretest PILL score as a covariate  $F(2, 29) = 1.6$ ,  $p = 0.21$ , partial eta squared = .039. The results indicate there was a weak relationship between the pre-intervention and post-intervention scores on the PILL, as indicated by a partial eta squared value of .039.

*Conclusions.* The results confirmed the hypotheses formulated in regards to stress. That is implementing an expressive writing intervention did not demonstrate a statistical significant reduction of stress in participants assigned to the emotional disclosure group compared to participants assigned to the factual disclosure group or the control group. Findings therefore, are in accordance with Spera, Buhrfeind, and

Pennebaker (1994) where participating in an expressive writing exercise did not show a difference between the experimental group and control group stress level after job loss. This finding may in part be explained by the previous research that expressive writing demonstrated positive effects with individuals with physical health ailments (Cancer; Arthritis;) and a weak relationship to expressive writing in physically healthy participants (Meads & Nouwen, 2005).

## Research Question 2

Research question two stated, "What is the effect of expressive writing on mood in a sample of undergraduate human services students?"

*Findings.* The analysis was a series of paired sample *t*-tests to determine if there were significant differences between the pretest scores and posttest scores for the emotional disclosure experimental group on the MAACL-R sub-scales for Anxiety, Depression, Hostility, Sensation Seeking, Positive Affect, Dysphoria Composite, and PASS Composite scores. The results indicated that there were no significant differences between the pretest and posttest scores on any of the sub-scales, ( Pretest score on the Anxiety scale ( $M = 50.10$ ,  $SD = 8.32$ ) ,posttest scores ( $M = 45.70$ ,  $SD = 8.58$ ),  $t = 2.14$ ,  $p < .061$  (two-tailed); pretest score on the Depression scale ( $M = 46.80$ ,  $SD = 6.89$ ) posttest score ( $M = 48.00$ ,  $SD = 8.91$ ),  $t = -.507$ ,  $p < .624$  (two-tailed); pretest on the Hostility scale ( $M = 51.10$ ,  $SD = 12.6$ ) posttest score ( $M = 52.10$ ,  $SD = 13.85$ ),  $t = -.299$ ,  $p < .772$  (two-tailed),pretest score on the Positive Affect scale ( $M = 55.20$ ,  $SD = 7.07$ ) posttest score ( $M = 59.70$ ,  $SD = 10.4$ ),  $t = 1.16$ ,  $p < .276$  (two-tailed); pretest score on the Sensation Seeking scale ( $M = 75.30$ ,  $SD = 18.6$ ) posttest score ( $M = 72.40$ ,  $SD = 15.7$ ),  $t = .474$ ,  $p < .647$  (two-tailed); the pretest score on Dysphoria Composite pretest score ( $M = 52.50$ ,  $SD =$

12.19) posttest score ( $M = 47.5$ ,  $SD = 9.8$ ),  $t = 1.68$ ,  $p < .127$  (two-tailed);, and pretest Pass Composite score ( $M = 55.80$ ,  $SD = 5.7$ ) posttest score ( $M = 56.70$ ,  $SD = 7.4$ )  $t = -3.31$ ,  $p < .048$  (two-tailed)). The means slightly varied between the pretest and posttest scores on the subscales of the MAACL-R. These differences were not statistically significant.

A series of paired sample t-tests were computed to determine if there were significant differences between the pretest scores and posttest scores for the factual disclosure experimental condition on the MAACL-R sub scales for Anxiety, Depression, Hostility, Sensation Seeking, Positive Affect, Dysphoria Composite, and PASS Composite scores. There were no significant differences found between the pretest score and posttest scores for this group on any of the subscales of the MAACL-R. ( pretest Anxiety scale score ( $M = 47.27$ ,  $SD = 13.4$ ) posttest Anxiety scale score ( $M = 49.45$ ,  $SD = 14.2$ ),  $t = -.526$ ,  $p < .610$  (two-tailed); pretest Depression scale score ( $M = 43.73$ ,  $SD = 7.19$ ) posttest Depression scale score ( $M = 41.27$ ,  $SD = 5.60$ ),  $t = 1.15$ ,  $p < .276$  (two-tailed); pretest Hostility scale score ( $M = 46.55$ ,  $SD = 7.10$ ) posttest Hostility scale score ( $M = 51.00$ ,  $SD = 18.38$ ),  $t(10) = .236$ ,  $p < .236$  (two-tailed); pretest Positive Affect score ( $M = 55.18$ ,  $SD = 7.85$ ) posttest Positive Affect score ( $M = 55.82$ ,  $SD = 6.71$ ),  $t = -.232$ ,  $p < .821$  (two-tailed); pretest Sensation Seeking scale score ( $M = 69.6$ ,  $SD = 8.1$ ) posttest Sensation Seeking scale score ( $M = 71.2$ ,  $SD = 13.5$ ),  $t = -.346$ ,  $p < .737$  (two-tailed); pretest Dysphoria Composite score ( $M = 48.09$ ,  $SD = 13.7$ ) posttest Dysphoria Composite score ( $M = 48.7$ ,  $SD = 16.1$ ),  $t = -.240$ ,  $p < .816$  (two-tailed); pretest Pass Composite score ( $M = 57.73$ ,  $SD = 10.03$ ) posttest Pass Composite score ( $M = 57.7$ ,  $SD = 10.0$ )  $t = .737$ ,  $p < .478$  (two-tailed) ). The means slightly varied between the pretest and posttest scores on the subscales of the MAACL-R.



A series of paired sample t-tests were computed to determine if there was a significant difference between the pretest scores and posttest scores for the Non-writing control group on the MAACL-R sub scales for Anxiety, Depression, Hostility, Sensation Seeking, Positive Affect, Dysphoria composite, and PASS composite scores. There were no significant differences found between the pretest score and posttest scores for the control group on any of the subscales of the MAACL-R. (Pretest score on the Anxiety scale (M= 55.09, SD= 15.488) posttest scores on the Anxiety scale (M= 54.91, SD= 15.404),  $t = -.066$ ,  $p > .949$  (two-tailed); pretest Depression scale score (M= 47.27, SD= 8.40) posttest Depression score (M= 49.00, SD= 11.61)  $t = -.662$ ,  $p > .523$  (two-tailed); pretest Hostility scale score (M= 50.27, SD= 8.13) posttest Hostility scale score (M= 54.09, SD= 12.15),  $t = -1.22$ ,  $p > .249$  (two-tailed); pretest Positive Affect scale score (M= 57.6, SD= 9.62) posttest Positive Affect scale score (M= 55.9, SD= 9.86),  $t = .492$ ,  $p > .634$  (two-tailed);. pretest Sensation Seeking scale score (M= 79.00, SD= 18.07) posttest Sensation Seeking (M= 79.27, SD= 16.04),  $t = -.051$ ,  $p > .960$  (two-tailed); pretest Dysphoria composite score (M= 45.18, SD= 15.7) posttest Dysphoria composite (M=53.82, SD=18.08),  $t = -1.62$ ,  $p > .136$  (two-tailed);. pretest PASS Composite core (M=59.91, SD 10.03) posttest PASS composite score (M= 58.36, SD= 8.72)  $t = .605$ ,  $p > .559$  (two-tailed) ). The means slightly varied between the pretest and posttest scores on the subscales of the MAACL-R, but were not statistically significant.

A one-way analysis of variance (ANOVA) was conducted to determine if there was a significant difference between the three groups on the pre-test scores of mood as measured by the MAACL-R. The results indicate that there was a not a significant difference on the pretest measure of mood on the subscales of the MAACL-R at the

$p < .05$  level for the three groups: Anxiety [ $F(2, 29) = 1.04, p = .368$ ], Depression [ $F(2, 29) = .710, p = .500$ ], Hostility [ $F(2, 29) = .704, p = .503$ ], Sensation Seeking [ $F(2, 29) = 1.01, p = .377$ ], Positive Affect [ $F(2, 29) = .292, p = .749$ ], Dysphoria [ $F(2, 29) = .721, p = .495$ ], and PASS [ $F(2, 29) = .560, p = .577$ ].

An ANCOVA was used to explore the effect of expressive writing on mood as measured by the MAACL-R sub scales for Anxiety, Depression, Hostility, Positive Affect, Sensation Seeking, Dysphoria, and PASS Composite, while controlling for the pretest scores by using the pretest score on the MAACL-R sub scales as the covariate in this analysis. Results indicate that there was no significant difference among the three groups on posttest score on the sub scale Anxiety [ $F(2,29) = 1.6, p = 0.21$ , partial eta squared = .077], the sub scale Depression, [ $F(2,29) = 1.5, p = 0.24$ , partial eta squared = .097], the sub scale Hostility [ $F(2,29) = .34, p = 0.72$ , partial eta squared = .024], the sub scale Positive Affect [ $F(2,29) = .72, p = 0.50$ , partial eta squared = .049], the sub scale Sensation Seeking [ $F(2, 29) = .46, p = 0.64$ , partial eta squared = .032], the sub scale Dysphoria [ $F(2, 29) = 2.5, p = .10$ , partial eta squared = .150], and the sub scale PASS, [ $F(2,29) = .64, p = 0.54$ , partial eta squared = .044]. The results indicate there was a weak relationship between the pre-intervention and post-intervention scores on the MAACL-R subscales, as indicated by the partial eta squared values on each subscale.

**Conclusion.** The results confirmed the hypotheses formulated in regards to mood. That is implementing an expressive writing intervention did not demonstrate a statistical significant change in mood for study participants assigned to the emotional disclosure group compared to participants assigned to the factual disclosure group or the control group. The findings therefore, are not in accordance with Smyth et.al (2008) whose study

indicated that from baseline to follow-up that participants in their experimental group demonstrated a significant reduction in mood than those in the control group. One explanation for these incongruent results may be that participants in the experimental group for this study did not write about a trauma but rather a negative experience.

Leopore and Greenberg (2002) assert that writing about past traumas involving shame or stigma in a disclosure study, are the most appropriate topic for expressive writing because they are the most likely to be inhibited. Therefore, disclosing of trauma may have yielded a different result.

### Research Question 3

Research question three states "What is the effect of expressive writing on perceived self-efficacy in a sample of undergraduate human services students?"

Findings. A paired-sample *t* test was computed using pre and posttest scores on the GSE for the emotional disclosure experimental group. The results indicated that there was not a significant difference between the pretest scores on the General Self-Efficacy Scale ( $M = 30.60$ ,  $SD = 2.459$ ) and the posttest scores on the General Self-Efficacy Scale ( $M = 30.90$ ,  $SD = 4.095$ ),  $t = -232$ ,  $p < .822$  (two-tailed).

A paired-sample *t*-test was computed on the GSE pretest and posttest scores for the factual disclosure experimental group. The results indicated that there was not a significant difference between the pretest scores on the General Self-Efficacy Scale ( $M = 30.00$ ,  $SD = 4.59$ ) and the posttest scores on the General Self-Efficacy Scale ( $M = 30.64$ ,  $SD = 4.93$ ),  $t = -1.55$ ,  $p < .152$  (two-tailed). The scores suggested an increase in self-efficacy but did not reach a level of statistical significance.

A paired samples *t*-test was conducted on the control group's pretest and posttest scores on the GSE. The results indicated that there was no significant difference between the General Self-Efficacy pretest score ( $M = 34.3$ ,  $SD = 3.66$ ) and General Self-Efficacy posttest score ( $M = 33.6$ ,  $SD = 3.26$ ),  $t = 1.08$ ,  $p > .308$  (two-tailed). The scores suggested a decrease in self-efficacy but did not reach a level of statistical significance.

A one-way ANOVA was computed between the three groups using the pretest scores on General Self-Efficacy Scale. The results found a significant difference among the three groups [ $F(2, 29) = 4.2$ ,  $p = 0.024$ ] with the control group scoring higher than did the other two groups. Post hoc analyses (Tukey HSD) indicated that there was a significant difference between the factual disclosure group ( $M = 30$ ,  $SD = 4.6$ ) and the control group,  $p < .30$ .

A one-way analysis of covariance (ANCOVA) was computed between posttest scores for the three groups. The pretest score on the GSE was used as the covariate. The results indicated that there was no significant difference among the three groups,  $F(2, 29) = .154$ ,  $p = .858$ , partial eta squared = .011 on the GSE. There was a weak relationship between the pre-intervention and post-intervention scores on the GSE, as indicated by a partial eta squared value of .011.

Conclusion. The results confirmed the hypotheses formulated in regards to self-efficacy. That is implementing an expressive writing intervention did not demonstrate a statistical significant change in self-efficacy for study participants assigned to the emotional disclosure group compared to participants assigned to the factual disclosure group or the control group. The findings therefore, are not in accordance with Gersten and Baker's (2001) meta-analysis that looked at teaching expressive writing to students with

disabilities. In their analysis of various studies they found evidence of positive effects of writing on students' sense of efficacy for being able to write. In a similar vein other studies (Cameron and Nichols, 1998) suggest expressive writing may increase a sense of self-efficacy related to managing emotions. The current study examined general self-efficacy and may have attained positive results if a specific aspect of self-efficacy was examined.

#### Research Question 4

Research question four states, "What is the effect of expressive writing on perception of instructor in a sample of undergraduate human services students?"

Findings. A paired sample t-test was computed using the pretest and posttest scores for the emotional disclosure experimental group on the Source Credibility Measure sub scales, which include the Competence Scale, the Caring Scale, and the Trustworthiness Scale. The results indicated there were no significant differences between the pretest and posttest scores on the sub-scales. (Competence Scale (M= 34.2, SD= 8.28) posttest score Competence Scale (M= 33.70, SD= 8.80),  $t = .469$ ,  $p > .651$  (two-tailed);, pretest Caring Scale (M= 29.00, SD= 12.70) posttest scores Caring Scale (M= 29.30, SD= 12.56),  $t(9) = -.282$ ,  $p > .785$  (two-tailed); pretest Trustworthiness Scale (M= 30.20, SD= 7.30) posttest score of the Trust-worthiness Scale (M= 29.00, SD= 6.83),  $t(9) = 2.03$ ,  $p > .074$  (two-tailed)). The means varied slightly between the pretest and posttest scores on the subscales of the Source Credibility Measure, but were not statistically significant.

A paired sample t-test was computed to determine if there was a significant difference between the pretest and posttest scores for the factual disclosure experimental

group on the Source Credibility Measure sub scales. The results indicated there were no significant differences between the pretest and posttest scores on any of the subscales. (Pretest Competence Scale (M= 37.55, SD= 5.70) posttest score Competence Scale (M= 36.36, SD= 5.01),  $t = .920$ ,  $p < .379$  (two-tailed); pretest score Caring Scale (M= 33.64, SD= 6.27) posttest scores on the Caring Scale (M= 32.27, SD= 4.17),  $t = 1.261$ ,  $p > .236$  (two-tailed); pretest score Trustworthiness Scale (M= 33.09, SD= 5.45) posttest score of the Trustworthiness Scale (M= 32.45, SD= 6.49),  $t = .502$ ,  $p < .626$  (two-tailed) ). The means varied slightly between the pretest and posttest scores on the subscales of the Source Credibility Measure, but were not statistically significant.

A series of paired sample t-tests were computed to determine if there was a significant difference between the pretest and posttest scores on the sub scales of the Source Credibility Measure for the non-writing control group. The results of the paired t-test indicate there was not a significant difference between the pretest and posttest scores on any of the subscales. (Pretest Competence Scale score (M= 36.09, SD= 4.68) posttest Competence Scale score (M= 36.00, SD= 6.77),  $t = .058$ ,  $p > .955$  (two-tailed); pretest Caring Scale score (M= 33.9, SD=7.12) posttest Caring Scale score (M= 34.4, SD= 6.20),  $t = -.374$ ,  $p > .716$  (two-tailed); pretest score Trustworthiness Scale (M= 31.7, SD= 3.61) posttest Trustworthiness Scale score (M= 31.3, SD= 3.66),  $t = .349$ ,  $p > .734$  (two-tailed) ). The means varied slightly between the pretest and posttest scores on the subscales of the Source Credibility Measure, but were not statistically significant.

A one-way ANOVA was conducted to determine if there was a significant difference between the three groups on the pretest mean scores on the Source Credibility Measure sub scales. There were no significant differences found on any of the

subscales. (Competence sub scale,  $F(2, 29) = .734$ ,  $p = .49$ ; Caring sub scale,  $F(2, 29) = .968$ ,  $p = .39$ ; Trustworthiness,  $F(2, 29) = .700$ ,  $p = .50$ ).

A one-way analysis of covariance (ANCOVA) conducted between the three groups on the posttest scores on the Source Credibility Measure while controlling for the pretest scores. The pretest score on the SCM was used as the covariate in this analysis. The results indicate there were no significant differences found on the Competence subscale  $F(2, 29) = .124$ ,  $p = .88$ , partial eta squared = .009, there were no significant differences found on the Caring sub scale,  $F(2, 29) = .808$ ,  $p = .456$ ,  $\eta^2 = .055$  and there were no significant differences found on the Trustworthiness sub scale,  $F(2, 29) = .282$ ,  $p = .76$ , partial eta squared = .055. The results indicate there was a weak relationship between the pre-intervention and post-intervention scores on the SCM subscales, as indicated by the partial eta squared values on each subscale.

**Conclusion.** The results confirmed the hypotheses formulated in regards to perception of instructor. That is implementing an expressive writing intervention did not demonstrate a statistical significant change in perception of instructor for study participants assigned to the emotional disclosure group compared to participants assigned to the factual disclosure group or the control group. The findings therefore, are in accordance with previous studies such as Teven and McCroskey (1997) that posits students' rating of perception of instructor is primarily influenced by the student's perception of instructors caring. Although instructor caring was a variable examined, the design of the study did not directly manipulate the variable instructor caring. Therefore, the expressive writing intervention yielded no statistical significant difference between the three study groups on three subscales of the Source Credibility Measure.

## **ADDITIONAL ANALYSES**

In addition to the four research questions and analysis of participants scores on study measures, additional analyses were conducted to examine the relationship between participants and instructors ethnicity. In an article by Russ, Simonds and Hunt (2002) the authors state, "teachers who are members of minorities were more likely to be perceived as less credible than teachers who are not." Hendrix (1998) reported similar findings after conducting a qualitative study that found that students at predominantly White universities reported that Black instructors experienced more challenges to classroom authority and their teaching credentials than White professors did. In light of these findings from previous research, analyses were conducted to explore the participants ratings of instructors on the Source Credibility Measure and the impact of participants and instructors ethnicity. A series of One-way Analysis of Variance were conducted to examine the relationship between participants and instructors ethnicity.

### **Interactions between participants and instructors' ethnicity**

Analysis consisted of a series of One-way ANOVAs conducted to determine the interaction between participants and instructors' ethnicity on each subscale of the Source Credibility Measure. The results indicated that the interaction related to the Competence Scale was significant,  $F(1,27) = 5.362$ ,  $p < .029$ . The interaction pertaining to the Caring Scale was also significant,  $F(1,27) = 8.928$ ,  $p < .006$ . However, no interaction was found on the Trustworthiness Scale,  $F(1,27) = 3.268$ ,  $p < .082$ .



### SIGNIFICANT MAIN EFFECTS OF INSTRUCTORS' ETHNICITY

Analysis consisted of One-way ANOVAs to examine the main effect of instructors' ethnicity on each subscale of the Source Credibility Measure subscales was conducted. Findings indicated that there was a main effect of instructor's ethnicity related to the Competence Scale,  $F(1,27) = 8.040$ ,  $p < .009$ . Specifically, the Caucasian instructor's score for Competence ( $M = 38.2$ ,  $SD = 1.5$ ) was significantly higher than the score for Competence assigned to the African-American instructor ( $M = 32.14$ ,  $SD = 1.5$ ). There was also a main effect of instructor's ethnicity pertaining to the Caring Scale,  $F(1,27) = 19.873$ ,  $p < .001$ . Specifically, the Caucasian instructor's score for Caring ( $M = 36.6$ ,  $SD = 1.5$ ) was significantly higher than the score for Caring assigned to the African-American instructor ( $M = 26.7$ ,  $SD = 1.5$ ). However, no main effect of instructor's ethnicity was found regarding Trustworthiness,  $F(1,27) = 4.010$ ,  $p < .082$ .

*Competence Scale.* The effect of participants' ethnicity on the Competence Scale score depended on the instructors' ethnicity. Simple effects demonstrated that when the participants were Caucasians, they rated the Caucasian instructor's competence ( $M = 39.25$ ,  $SD = 4.3$ ) significantly higher than the African-American instructor's competence ( $M = 28.29$ ,  $SD = 7.4$ ), while when the participants were African Americans, there was no significance difference in the rating of the instructor's competence between the Caucasian instructor ( $M = 37.13$ ,  $SD = 5.0$ ) and African-American instructor ( $M = 36.00$ ,  $SD = 6.8$ ).

*Caring Scale.* The effect of participants' ethnicity on the Caring Scale grading depended on the instructors' ethnicity (or vice-versa). When the participants were Caucasians, they scored the Caucasian instructor's caring ( $M = 38.75$ ,  $SD = 4.0$ )

significantly higher than the African-American instructor's caring ( $M = 22.29$ ,  $SD = 9.2$ ), while when the participants were African Americans, there was no significance difference in the grading of the instructor's caring between the Caucasian instructor ( $M = 34.38$ ,  $SD = 5.3$ ) and African-American instructor ( $M = 31.13$ ,  $SD = 5.4$ ).

### Summary

Comparisons within the emotional disclosure experimental group between the pretest and posttest measure of stress, mood, self-efficacy, and perception of instructor were conducted. These within group comparisons did find a difference in the pretest and posttest scores on the PILL, MAACL-R, GSE, and SCM but the scores were not statistically significant. Comparisons within the factual disclosure experimental group between the pretest and posttest measure of stress, mood, self-efficacy, and perception of instructor were conducted. These within group comparisons did find a difference in the pretest and posttest scores on the PILL, MAACL-R, GSE, and SCM but the scores were not statistically significant. Comparisons within the non-writing control group between the pretest and posttest measure of stress, mood, self-efficacy, and perception of instructor were conducted. These within group comparisons did find a difference in the pretest and posttest scores on the PILL, MAACL-R, GSE, and SCM but the scores were not statistically significant. Comparisons among three groups between the pretest and posttest measure of stress, mood, self-efficacy, and perception of instructor were conducted. These within group comparisons did find a difference in the pretest scores on the PILL, MAACL-R, and SCM but the scores were not statistically significant. The GSE

pretest score reached the level of statistical significance, the control group scoring higher than the other two groups.

### **Limitations of the Study**

This study included multiple limitations that should be taken into consideration when interpreting the results. Internal validity is the ability of the research design to rule out or make alternative explanation of the results (Marczyk et al., 2005). Internal validity threats include “experimental procedures, treatments, or experiences of the participants that threaten the researcher’s ability to draw correct inferences from the data about the population in an experiment” (p. 162).

*Social desirability.* Social desirability may have affected participant’s written responses to the writing prompts and their responses to the MAACL-R, the GSE, and the PILL. Social desirability occurs when participants respond to instruments in socially acceptable ways rather than reporting their true feelings or beliefs (Vella-Broderick & White, 1997). Social desirable responses have “the potential to attenuate, inflate, or moderate variable relationships depending on the measures being used and the model under consideration” (Fisher & Katz, 2000, p. 106). Participants in this study may have been reactive to the instruments and the expressive writing being aware that writing would be read. In attempt to reduce this, confidentiality and anonymity was ensured for this research study.

The PILL required participants to self-report on the frequency of experiencing specific physical symptoms, using a 5-point Likert-type scale ranging from 1 (have never or almost never experienced the symptom) to 5 (experienced more than once a week.)

Higher scores generally reflect more severe levels of physical symptomatology (Pennebaker, 1982). Due to this, participants may not have rated themselves as having symptoms that may be embarrassing to report.

The MAACL-R, assesses affective mood state (Lubin & Zuckerman, 1999) It is a self report measure that consists of 132 adjectives that refer to report of current mood. The measure designed for a reading level of sixth-grade requires approximately five minutes to complete. Due the number of items, participants may not have rated themselves as they actually view their mood.

*Selection.* The majority of participants who comprised this sample were female (99%). This study was primarily limited by its small sample size. The study included 32 participants assigned to three groups. There were 11 participants in each of the two experimental groups and 10 participants in the control group. The small sample size increased the probability that differences would not be detected at the level of statistical significance.

*External validity threats.* External validity is how generalizable the results of the research study are (Marczyk et al., 2005). According to Creswell (2009), external validity threats “arise when experimenters draw incorrect inferences from the sample data to other persons, other settings, and past or future situations” (p. 162). The participants for this study were recruited from five undergraduate classes within the Counseling and Human Services Department, which limits the ability to generalize results to a larger population of college students and the general population.

*Instrumentation.* Instrumentation threats may also exist within this study. This study is not longitudinal in design. Therefore, taking the same measure multiple times

within a three-day period may affect scores as practice, memory, research expectations, and sensitization may develop. The study writing prompts may also be a limitation of this study. In Pennebaker and Beal's (1986) original writing protocol participants wrote based on prompts that asked that they disclose a traumatic life event. In the current study, the researcher did not include prompts that asked participants to write about a traumatic event as prompt help was not available if psychological distress was to occur. The writing prompts for this study may not have been sufficient to induce feelings or emotions about their time as a student. It seems this limitation could not be avoided due to the data collection method. Students were not in a controlled environment when writing based on the prompts. The researcher was concerned about student's reactions to writing about a trauma in an uncontrolled environment. The data collection method used in this study may have affected the completion of all study materials. Due to data being collected by a web based interface study participants completed study related materials independent of the researcher and in some cases did not remember to log in to participate in the study or lost their log in information. Additionally, some participants had technical difficulties with the software, which lead to their not completing all three days of the study.

Another limitation to this study was the time period for data collection. According to Pennebaker and Beal's (1986) original protocol data was collected over three consecutive days. Some potential study participants declined participation due to unavailability to complete study instruments and writing for three consecutive days.

### **Implications for Further Research**

This study explored expressive writing's effect on four constructs that have been correlated with successful academic outcome: stress, mood, self-efficacy, and perception of instructor. Expressive writing studies have been conducted to examine its efficacy with clinical as well as non-clinical populations with the most significant improvement being with physical ailments versus psychological ailments. These studies include the efficacy of expressive writing with: asthma and rheumatoid arthritis patients (Kelly, Lumley, & Leisen, 1997), insomnia patients (Harvey & Farrell, 2003), patients with rumination and depression symptoms (Görtner, Rude, & Pennebaker, 2006), individuals recall of collective trauma (Fernandez & Paez, 2008), and male college students with restrictive emotionality (Wong and Rochlen, 2009). In studying the effects of expressive writing on stress, mood, self-efficacy, and perception of instructor, this study added to the body of research on expressive writing as an intervention with non-clinical populations. Despite the lack of statistical significance, the results of this study indicate that the expressive writing intervention demonstrated a trend toward statistical significance.

Results from the current study imply that further study is needed with expressive writing in non-clinical populations. An important area for exploration is to examine how gender may play a role in the efficacy of expressive writing. In the current study most of the participants were female. Balancing the gender of participants may improve study results. Another area for future study is to modify the expressive writing protocol to allow study participants to choose from several prompts. In doing so, study participants may be more inclined to express emotions and feelings according to the writing prompt.

It is suggested that future studies collect data directly from participants rather using a web-based interface. Study participants may be more inclined to complete study materials if they have to submit the documents directly to the researcher such as in a classroom setting. Finally, conducting a longitudinal study of expressive writing may add to the body of knowledge that seeks to explore variations of the original expressive writing protocol. For example, having study participants write once per week for six weeks may demonstrate efficacy in non-clinical populations versus writing for only three days.

### **Implications for Counselor Educators**

The current study found that expressive writing could be successfully implemented as an intervention with students. This should be of particular interest to Counselor Educators. Davis (2008) points to the fact that creative approaches in counseling practice have been steadily emerging as evidenced by a division in the American Counseling Association called the Association for Creativity in Counseling. Creativity in counseling espouses the use of creative and expressive approaches to the practice of counseling. Perhaps counselor educators may want to begin exposing counselors in training to expressive writing as an adjunct to counseling as well as a self-care tool. It is well documented in the literature that the problem of counselor impairment is often a result of anxiety, job stress, and burnout, (Young & Lambie, 2007; O'Halloran & Linton, 2000; Stebnicki, 2000) For instance, counselor educators could have students use expressive writing as a form of journaling to reduce the stress experienced by many graduate students. Counselor educators can demonstrate the use of

expressive writing with clients in individual sessions or with groups. As emphasized by Witmer & Young (1996) counselor educators should also attempt to systematically incorporate a wellness model in counselor education and equip students with these skills during their training. Hanna and Bemark (1997) posit that counselor effectiveness depends more on personal characteristics of the counselor than on training, and theory. Therefore, greater emphasis needs to be placed on helping counselor trainees to address personal development through wellness strategies such as expressive writing.

### **Conclusion**

The purpose of this study was to investigate the effect of expressive writing on stress, mood, self-efficacy, and perception of instructor in undergraduate Human Services students. Prior to participants responding to a writing prompt, demographic data including scores on the MAACL-R, PILL, SCM and GSE, was obtained. Data was collected for three consecutive days and finally posttest measures were administered. Although the study did not reveal any statistically significant results, the study contributed to the literature on expressive writing in academic settings. The dependent variables stress, mood, self-efficacy, and perception of instructor are all variables the literature indicates has an effect on academic outcome (Zajacova et. al, 2005, Teven and McCroskey, 1996). Therefore, future research, including quantitative and qualitative studies is recommended to explore the efficacy of expressive writing in post-secondary education settings and the effect of expressive writing on academic outcome.



**CHAPTER VI: MANUSCRIPT**

**THE EFFECTS OF EXPRESSIVE WRITING ON STRESS, MOOD, AND  
PERCEPTION OF SELF-EFFICACY AND OF INSTRUCTOR**

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### Abstract

The purpose of this study was to determine the effects of a short-term expressive writing intervention on stress, mood, self-efficacy, and perception of instructor in a population of undergraduate human services students. There were 32 participants assigned to three experimental conditions (N = 10) emotional disclosure group, (N = 11) factual disclosure group, and (N = 11) the control group. The results indicate there was no significant difference among the three groups on the pretest and posttest measures on the dependent variables. However, the results demonstrated a trend toward significance and the possible efficacy of using expressive writing as a short term, inexpensive method to help students confront past traumas, neutralize problems concerning inhibition, and promote self-determining behaviors.

Key Words: Expressive Writing, Stress, Mood

## The Effects of Expressive Writing On Stress, Mood, Perception Of Self-Efficacy And Instructor

College students confront many issues and concerns that inhibit their ability to function well and maintain a constructive pace with their academic endeavors. According to D'Zurilla & Sheedy (1991), college students, are prone to stress, particularly in their first year. Stress as well as other pressures associated with the transitional nature of college may affect the student's ability to cope (Towes & Cohen, 1996). College students experiencing stress and transitional difficulties may benefit from exposure to the expressive writing paradigm. Dr. James Pennebaker's research on the efficacy of writing as a means to improve the health and mental well being of various populations has resulted in improved outcome for many. The protocol for expressive writing asks study participants to write about a trauma or some neutral topic for 15 minutes a day for 3-4 consecutive days. Pennebaker and Beall (1986) found that undergraduates who wrote about stressors in their life had fewer health center visits in the six months after participating in an expressive writing study. Since that time hundreds of studies have been conducted using various populations. Expressive writing can be implemented as a short term, inexpensive method to help students confront past traumas, neutralize problems concerning inhibition, and promote self-determining behaviors.

The purpose of this study was to determine if emotional disclosure through expressive writing would have an effect on stress, mood, and perceptions of self-efficacy and instructor for undergraduate students majoring in human services. Expressive writing has been implemented as an intervention for physical and psychological impairments. In

this study, expressive writing in a non-clinical population may demonstrate an effect on physical and psychological health of study participants.

## Method

### *Participants*

The participants involved in this study were 32 undergraduate students enrolled in the Human Services program at the Darden School of Education at Old Dominion University. The students were recruited from five sections of Human Services classes with two instructors. All classes are required for the completion of the Bachelor of Science in Human Services Degree. All participants were recruited on a voluntary basis. The participants included students of varying class standing, ethnicities, ages, and both genders. Study participants received course credit for participation in the study. Students who elected to not participate had the option to complete an assignment provided by the course instructor for credit.

### *Data Collection*

Prior to collecting data, permission to conduct the research was obtained from the Old Dominion University Institutional Review Board (IRB). Each participant received a copy of the IRB permission to conduct research. Participants signed a consent form stating they voluntarily consent to participate in the study prior to the start of data collection.

Data was collected over a five-day period. On the first day of data collection, the researcher met with all classes that were included in the study. At that time any students that consented to volunteer for participation in the study was asked to participate in a brief orientation. During the orientation all volunteers received a packet with an

informed consent document, IRB permission to conduct research letter, and instructions on how to access the data collection site. Each volunteer received a unique user identification number that was known only by the participant and the researcher. All volunteers completed the informed consent prior to receiving their log in information. After completion of all paper work the volunteers were reminded to log into the data collection site to complete the first day of data collection prior to midnight. Upon their first log in participants were randomly assigned to one of three conditions: emotional disclosure experimental group, factual disclosure experimental group, and the control group. Participation in the study was for three days. The writing groups wrote for 15 minutes per day. The emotional disclosure experimental group wrote about their emotions and feelings about a negative or stressful event during their time as a student. The factual disclosure group wrote about their academic goals or plans. The control group did not write. All groups completed pre and post test measures. At the first log in all participants completed a demographic survey and four measures: The PILL, MAACL-R, GSE, and SCM. The two experimental groups wrote based on the prompt provided. The control group was directed to exit the web based interface after completion of the four measures. At the conclusion of 15 minutes the writing assignment stopped accepting input and the participant was directed to exit the site. A reminder email was sent to participants in the experimental group reminding them to log on for the second day of data collection. On the second day of the study all participants in the experimental groups should have logged into the data collection site and completed a 15- minute written assignment according to the same prompt as day one. A reminder email was sent out to all participants reminding them to log for the third day of data

collection. On the third day of the study, all participants should have logged in to the data collection site. The two experimental groups completed the final 15-minute expressive writing assignment and post measures. The control group completed post measures. Only study participants in the experimental groups and control group that completed all three days of study assignments were included in the analysis of data.

### *Writing Prompts*

Experimental Group One. Participants assigned to this condition were given a written task that is a variation of the protocol suggested by Pennebaker (1994) in “Some Suggestions for Running a Confession Study.” The participants were provided the following instructions:

The writing exercise you will participate in for the next three days will focus on your thoughts and feelings about your experiences as a student. Do not be concerned about spelling, grammar or sentence structure. Each days writing exercise will last for 15 minutes. All of the writing were confidential.

Instructions for Day 1: In your writing, share your deepest thoughts and feelings about your experiences as a student. Specifically, we would like to know about stressful and negative experiences and/or recurring problems related to your academics, instructor relationship, your academic ability, or any ongoing difficulties that have affected you as a student. This can be a single event or a series of events, or ongoing problems. Please write about how you felt and what affects these events had or are having on you. In addition to discussing the facts of the events, discuss your deepest thoughts and feelings related to these occurrences. You may continue to write until the site stops accepting input.

Instructions for Day 2: Today, we want you to continue to share your deepest thoughts and feelings about your experiences as a student. It can be the same topic that you wrote about yesterday or it could be something different. Again, we would like to know about stressful and negative experiences and/or recurring problems related to your academics, instructor relationships, and your academic ability, or any ongoing difficulties that have affected you. This can be a single event or a series of events, or ongoing problems. Please write about how you felt and what affects these events had or are having on you. In addition to discussing the facts of the events, discuss your deepest thoughts and feelings related to these occurrences. You may continue to write until the site stops accepting input. Instructions for Day 3: Today is the last day. Continue to share your deepest thoughts and feelings about your experiences as a student. Please remember, we would like to know about stressful and negative experiences and/or recurring problems related to your academic experience, an instructor, your academic ability, or any ongoing difficulties that have affected you. This can be a single event or a series of events, or ongoing problems. Please write about how you felt and what affects these events had or are having on you. In addition to discussing the facts of the events, discuss your deepest thoughts and feelings related to these occurrences. Remember that this is the last day and so you might want to wrap everything up. You may continue to write until the site stops accepting input.

Experimental Group Two. Participants assigned to this condition were given a written task that is a variation of the protocol used by Lumley and Provenzano (2003) in their study on managing stress through written emotional disclosure. The participants were given the following instructions:

The writing exercise you will participate in for the next 3 days will focus on academic and career goal setting. During each of the 3 days you will write about your goals and plans to achieve these goals. When writing about your goals and plans be as objective as possible. Write only about your goals and plans to achieve these goals. Avoid writing about your feelings, concerns, worries or problems associated with the stated goals and goal achievement plan. Attempt to leave out opinions and attitudes. Your task is to only state specific goals and specific plans to accomplish these goals. All of the writing is confidential. Do not be concerned about spelling, grammar or sentence structure. Each day's writing exercise will last for 15 minutes. You may continue to write until the site stops accepting input.

Instructions for Day 1: Write about your goals for the remainder of the semester and your plan to achieve these goals. Write only about your goals and plans to achieve these goals. Avoid writing about your feelings, concerns, worries or problems associated with the stated goals and goal achievement plan. Attempt to leave out opinions and attitudes. Your task is only to state specific goals and specific plans to accomplish these goals.

Instructions for Day 2: Write about your goals related to completing your degree program and your plan to achieve these goals. Write only about your goals and plans to achieve these goals. Avoid writing about your feelings, concerns, worries or problems associated with the stated goals and goal achievement plan. Attempt to leave out opinions and attitudes. Your task is to state specific goals and specific plans to accomplish these goals.



Instructions for Day 3: Write about your career goals for the next five years and your plan to achieve these goals. Write only about your goals and plans to achieve these goals. Avoid writing about your feelings, concerns, worries or problems associated with the stated goals and goal achievement plan. Attempt to leave out opinions and attitudes. Your task is only to state specific goals and specific plans to accomplish these goals.

Control Group. Participants assigned to this condition were administered the demographic survey and four measures. Participants assigned to this condition did not complete any writing outside of completing the measures and demographic survey. The participants were given the following instructions:

Instructions for Day 1: Complete the following measures. All information provided is confidential. The time needed to complete the measures is approximately 15 minutes. You will not be required to log into this site until day three of the study. You will receive an email on day two of the study reminding you to log in.

Instructions for Day 3: Complete the following measures. The time needed to complete the measures is approximately 15 minutes.

### *Instrumentation*

There were four instruments used in this study. The instruments were the Pennebaker Inventory of Limbic Languidness (PILL; Pennebaker, 1980), The Multiple Affect Adjective Checklist Revised (MAACL; Zuckerman & Lubin, 1965), The General Self-efficacy Scale (GSE; Jerusalem & Schwarzer, 1979), and The Source Credibility Measure (McCroskey & Teven, 1999).

*Pennebaker Inventory of Limbic Languidness.* The PILL is a 54-item measure of common physical symptoms associated with stress and complaints and used to assess

general physical symptoms. It has been used extensively in college populations (Linden, Paulhus, & Dobson, 1986; Pennebaker, 1982). Study participants are asked to rate the frequency of experiencing specific physical symptoms, using a 5-point Likert-type scale ranging from 1 (have never or almost never experienced the symptom) to 5 (experienced more than once a week.) Higher scores generally reflect more severe levels of physical symptomatology (Pennebaker, 1982). The Cronbach alpha range is .88 to .91

*Multiple Affect Adjective Check List-Revised.* The MAACL-R, assesses affective mood state (Lubin & Zuckerman, 1999) It is a self report measure that consists of 132 adjectives that refer to report of current mood. The measure designed for a reading level of sixth-grade requires approximately five minutes to complete. The MAACL-R has five scales (anxiety, hostility, depression, positive affect, and sensation seeking) that contribute to two constructs (dysphoria and positive affect and sensation seeking). Raw scores for anxiety, hostility and depression are combined to form the dysphoria composite factor. Raw scores for positive affect and sensation seeking form a composite score for, Positive Affect-Sensation Seeking(PASS; Lubin & Zuckerman, 1999). The cronbach alpha internal consistency ranges from .81 to .95 for dysphoria and .88 to .94 for PASS(Lubin & Zuckerman, 1999).

*General Self-Efficacy Scale.* The GSE assesses a general sense of perceived self-efficacy with the aim to predict coping with daily hassles as well as adaption after experiencing all kinds of stressful life events (Jerusalem & Schwarzer, 1981). The construct of perceived self-efficacy reflects an optimistic self belief. This is the belief that one can perform a novel or difficult tasks, or cope with adversity in various domains (Schwarzer, 1992) The GSE consists of 10 items. It normally takes four minutes on

average to administer. Responses are made on a 4-point scale. The responses are summed to yield a composite score (Jerusalem & Schwarzer, 1981). In samples from 23 nations, Cronbach's alphas ranged from .76 to .90, with the majority in the high 80's. The scale is unidimensional (Jerusalem & Schwarzer, 1981).

*Source Credibility Measure.* The SCM is composed of three constructs: competence, character, and caring. The 18 item measure is constructed using Snider & Osgood's (1969) semantic differential technique. Each construct is measured using six bipolar scales with a 7 point Likert-type scale. Mcroskey and Teven (1999) report that the development of the SCM utilized oblique factor analysis, which generated correlated dimensions. The Cronbach alpha range is between .80 and .94.

#### Data Analysis

The Data was analyzed using the Statistical Package for the Social Sciences 17.0. Descriptive and Inferential statistical analysis were used to examine collected data. The demographic data was reported as frequencies and were analyzed to determine significant differences between and within the experimental groups and the control group. A one-way between groups analysis of covariance was conducted to compare the effectiveness of the independent variable expressive writing, and the posttest scores of the dependent variables stress as measured by the PILL, mood as measured by summary scale DYS and PASS on MAACL-R, perceived self-efficacy as measured by the GSE and perception of instructor as measured by SCM. The pretest scores for the dependent variables stress, mood, perceived self-efficacy and perception of instructor were used as the covariate in the analysis.

## Results

### Research Question 1

Research question one stated, "What is the effect of expressive writing on perceived stress in a sample of undergraduate human services students?"

*Findings.* The results of the paired sample t-test indicate there was no significant difference between the pretest PILL score ( $M = 10.40$ ,  $SD = 4.99$ ) and the posttest PILL score ( $M = 9.60$ ,  $SD = 5.02$ );  $t(9) = 1.04$ ,  $p < .327$  (two-tailed) for the emotional disclosure experimental group on this measure. The scores demonstrated a reduction of perceived stress but did not reach a level of statistical significance. The results of the paired sample t-test for the factual disclosure experimental group on pretest and posttest showed no significance difference between the pretest PILL score ( $M = 6.91$ ,  $SD = 5.11$ ) and the posttest PILL score ( $M = 6.73$ ,  $SD = 5.59$ );  $t(10) = .235$ ,  $p < .819$  (two-tailed) for the factual disclosure experimental group on this measure. The scores demonstrated a reduction of perceived stress but did not reach a level of statistical significance. The results of the paired sample t-test for the control group on pretest and posttest showed no significant difference between the pretest PILL ( $M = 10.00$ ,  $SD = 4.60$ ) and the posttest PILL ( $M = 10.45$ ,  $SD = 5.83$ ),  $t = -.524$ ,  $p > .612$  (two-tailed) for the non-writing control group on this measure. The scores demonstrated an increase of perceived stress but did not reach a level of statistical significance. A one-way analysis of variance (ANOVA) was conducted to determine if there was a significant difference between the three groups on the pre-test scores of stress as measured by the PILL showed no significant differences on the pretest measure of stress at the  $p < .05$  level for the three groups  $F(2, 29) = 1.63$ ,  $p = .213$ .

A one-way analysis of covariance was conducted to compare the effects of expressive writing on the experimental groups and non-writing group, on the posttest PILL score using the pretest PILL score as a covariate  $F(2,29)= 1.6, p= 0.21$ , partial eta squared = .039. The results indicate there was a weak relationship between the pre-intervention and post-intervention scores on the PILL, as indicated by a partial eta squared value of .039.

*Conclusions.* The results confirmed the hypotheses formulated in regards to stress. That is implementing an expressive writing intervention did not demonstrate a statistical significant reduction of stress in participants assigned to the emotional disclosure group compared to participants assigned to the factual disclosure group or the control group. Findings therefore, are in accordance with Spera, Buhrfeind, and Pennebaker (1994) where participating in an expressive writing exercise did not show a difference between the experimental group and control group stress level after job loss. This finding may in part be explained by the previous research that expressive writing demonstrated positive effects with individuals with physical health ailments (Cancer; Arthritis;) and a weak relationship to expressive writing in physically healthy participants (Meads & Nouwen, 2005).

### *Research Question 2*

Research question two stated, "What is the effect of expressive writing on mood in a sample of undergraduate human services students?"

*Findings.* The analysis was a series of paired sample *t*-tests to determine if there were significant differences between the pretest scores and posttest scores for the emotional disclosure experimental group on the MAACL-R sub- scales for Anxiety,

Depression, Hostility, Sensation Seeking, Positive Affect, Dysphoria Composite, and PASS Composite scores. The results indicated that there were no significant differences between the pretest and posttest scores on any of the sub-scales, ( Pretest score on the Anxiety scale ( $M = 50.10$ ,  $SD = 8.32$ ) ,posttest scores ( $M = 45.70$ ,  $SD = 85.8$ ),  $t = 2.14$ ,  $p < .061$  (two-tailed); pretest score on the Depression scale ( $M = 46.80$ ,  $SD = 6.89$ ) posttest score ( $M = 48.00$ ,  $SD = 8.91$ ),  $t = .507$ ,  $p < .624$  (two-tailed); pretest on the Hostility scale ( $M = 51.10$ ,  $SD = 12.6$ ) posttest score ( $M = 52.10$ ,  $SD = 13.85$ ),  $t = -.299$ ,  $p < .772$  (two-tailed),pretest score on the Positive Affect scale ( $M = 55.20$ ,  $SD = 7.07$ ) posttest score ( $M = 59.70$ ,  $SD = 10.4$ ),  $t = 1.16$ ,  $p < .276$  (two-tailed); pretest score on the Sensation Seeking scale ( $M = 75.30$ ,  $SD = 18.6$ ) posttest score ( $M = 72.40$ ,  $SD = 15.7$ ),  $t = .474$ ,  $p < .647$  (two-tailed); the pretest score on Dysphoria Composite pretest score ( $M = 52.50$ ,  $SD = 12.19$ ) posttest score ( $M = 47.5$ ,  $SD = 9.8$ ),  $t = 1.68$ ,  $p < .127$  (two-tailed);, and pretest Pass Composite score ( $M = 55.80$ ,  $SD = 5.7$ ) posttest score ( $M = 56.70$ ,  $SD = 7.4$ )  $t = -.331$ ,  $p < .748$  (two-tailed)). The means slightly varied between the pretest and posttest scores on the subscales of the MAACL-R. These differences were not statistically significant.

A series of paired sample t-tests were computed to determine if there were significant differences between the pretest scores and posttest scores for the factual disclosure experimental condition on the MAACL-R sub scales for Anxiety, Depression, Hostility, Sensation Seeking, Positive Affect, Dysphoria Composite, and PASS Composite scores. There were no significant differences found between the pretest score and posttest scores for this group on any of the subscales of the MAACL-R. ( pretest Anxiety scale score ( $M = 47.27$ ,  $SD = 13.4$ ) posttest Anxiety scale score ( $M = 49.45$ ,  $SD = 14.2$ ),  $t = -.526$ ,  $p < .610$  (two-tailed); pretest Depression scale score ( $M = 43.73$ ,

SD=7.19) posttest Depression scale score ( $M = 41.27$ ,  $SD = 5.60$ ),  $t(10) = 1.15$ ,  $p < .276$  (two-tailed); pretest Hostility scale score ( $M = 46.55$ ,  $SD = 7.10$ ) posttest Hostility scale score ( $M = 51.00$ ,  $SD = 18.38$ ),  $t(10) = .236$ ,  $p < .236$  (two-tailed); pretest Positive Affect score ( $M = 55.18$ ,  $SD = 7.85$ ) posttest Positive Affect score ( $M = 55.82$ ,  $SD = 6.71$ ),  $t = -.232$ ,  $p < .821$  (two-tailed); pretest Sensation Seeking scale score ( $M = 69.6$ ,  $SD = 8.1$ ) posttest Sensation Seeking scale score ( $M = 71.2$ ,  $SD = 13.5$ ),  $t = -.346$ ,  $p < .737$  (two-tailed); pretest Dysphoria Composite score ( $M = 48.09$ ,  $SD = 13.7$ ) posttest Dysphoria Composite score ( $M = 48.7$ ,  $SD = 16.1$ ),  $t = -.240$ ,  $p < .816$  (two-tailed); pretest Pass Composite score ( $M = 57.73$ ,  $SD = 10.03$ ) posttest Pass Composite score ( $M = 57.7$ ,  $SD = 10.0$ )  $t = .737$ ,  $p < .478$  (two-tailed) ). The means slightly varied between the pretest and posttest scores on the subscales of the MAACL-R.

A series of paired sample t-tests were computed to determine if there was a significant difference between the pretest scores and posttest scores for the Non-writing control group on the MAACL-R sub scales for Anxiety, Depression, Hostility, Sensation Seeking, Positive Affect, Dysphoria composite, and PASS composite scores. There were no significant differences found between the pretest score and posttest scores for the control group on any of the subscales of the MAACL-R. (Pretest score on the Anxiety scale ( $M = 55.09$ ,  $SD = 15.488$ ) posttest scores on the Anxiety scale ( $M = 54.91$ ,  $SD = 15.404$ ),  $t = -.066$ ,  $p > .949$  (two-tailed); pretest Depression scale score ( $M = 47.27$ ,  $SD = 8.40$ ) posttest Depression score ( $M = 49.00$ ,  $SD = 11.61$ )  $t = -.662$ ,  $p > .523$  (two-tailed); pretest Hostility scale score ( $M = 50.27$ ,  $SD = 8.13$ ) posttest Hostility scale score ( $M = 54.09$ ,  $SD = 12.15$ ),  $t = -1.22$ ,  $p > .249$  (two-tailed); pretest Positive Affect scale score ( $M = 57.6$ ,  $SD = 9.62$ ) posttest Positive Affect scale score ( $M = 55.9$ ,  $SD = 9.86$ ),  $t = .492$ ,  $p >$

.634 (two-tailed);. pretest Sensation Seeking scale score ( $M= 79.00$ ,  $SD= 18.07$ ) posttest Sensation Seeking ( $M= 79.27$ ,  $SD= 16.04$ ),  $t= -.051$ ,  $p > .960$  (two-tailed); pretest Dysphoria composite score ( $M= 45.18$ ,  $SD= 15.7$ ) posttest Dysphoria composite ( $M=53.82$ ,  $SD=18.08$ ),  $t= -1.62$ ,  $p > .136$  (two-tailed);. pretest PASS Composite core ( $M=59.91$ ,  $SD 10.03$ ) posttest PASS composite score ( $M= 58.36$ ,  $SD= 8.72$ )  $t= .605$ ,  $p> .559$  (two-tailed) ). The means slightly varied between the pretest and posttest scores on the subscales of the MAACL-R, but were not statistically significant.

A one-way analysis of variance (ANOVA) was conducted to determine if there was a significant difference between the three groups on the pre-test scores of mood as measured by the MAACL-R. The results indicate that there was a not a significant difference on the pretest measure of mood on the subscales of the MAACL-R at the  $p<.05$  level for the three groups: Anxiety [ $F(2, 29) = 1.04$ ,  $p = .368$ ], Depression [ $F(2, 29) = .710$ ,  $p = .500$ ], Hostility [ $F(2, 29) = .704$ ,  $p = .503$ ], Sensation Seeking [ $F(2, 29) = 1.01$ ,  $p = .377$ ], Positive Affect [ $F(2, 29) = .292$ ,  $p = .749$ ], Dysphoria [ $F(2, 29) = .721$ ,  $p = .495$ ], and PASS [ $F(2, 29) = .560$ ,  $p = .577$ ].

An ANCOVA was used to explore the effect of expressive writing on mood as measured by the MAACL-R sub scales for Anxiety, Depression, Hostility, Positive Affect, Sensation Seeking, Dysphoria, and PASS Composite, while controlling for the pretest scores by using the pretest score on the MAACL-R sub scales as the covariate in this analysis. Results indicate that there was no significant difference among the three groups on posttest score on the sub scale Anxiety[  $F(2,29)= 1.6$ ,  $p= 0.21$ , partial eta squared = .077], the sub scale Depression, [ $F(2,29)= 1.5$ ,  $p= 0.24$ , partial eta squared = .097], the sub scale Hostility [ $F(2,29)= .34$ ,  $p= 0.72$ , partial eta squared = .024], the sub



scale Positive Affect [ $F(2,29) = .72$ ,  $p = 0.50$ , partial eta squared = .049], the sub scale Sensation Seeking [ $F(2, 29) = .46$ ,  $p = 0.64$ , partial eta squared = .032], the sub scale Dysphoria [ $F(2, 29) = 2.5$ ,  $p = .10$ , partial eta squared = .150], and the sub scale PASS, [ $F(2,29) = .64$ ,  $p = 0.54$ , partial eta squared = .044]. The results indicate there was a weak relationship between the pre-intervention and post-intervention scores on the MAACL-R subscales, as indicated by the partial eta squared values on each subscale.

*Conclusion.* The results confirmed the hypotheses formulated in regards to mood. That is implementing an expressive writing intervention did not demonstrate a statistical significant change in mood for study participants assigned to the emotional disclosure group compared to participants assigned to the factual disclosure group or the control group. The Findings therefore, are not in accordance with Smyth et.al (2008) whose study indicated that from baseline to follow-up that participants in their experimental group demonstrated a significant reduction in mood than those in the control group. One explanation for these incongruent results may be that participants in the experimental group for this study did not write about a trauma but rather a negative experience. Leopore and Greenberg (2002) assert that writing about past traumas involving shame or stigma in a disclosure study, are the most appropriate topic for expressive writing because they are the most likely to be inhibited. Therefore, disclosing of trauma may have yielded a different result.

### *Research Question 3*

Research question three states "What is the effect of expressive writing on perceived self-efficacy in a sample of undergraduate human services students?"

*Findings.* A paired-sample  $t$  test was computed using pre and posttest scores on the GSE for the emotional disclosure experimental group. The results indicated that there was not a significant difference between the pretest scores on the General Self-Efficacy Scale ( $M= 30.60$ ,  $SD= 2.459$ ) and the posttest scores on the General Self-Efficacy Scale ( $M= 30.90$ ,  $SD= 4.095$ ),  $t= -232$ ,  $p< .822$  (two-tailed).

A paired-sample  $t$ -test was computed on the GSE pretest and posttest scores for the factual disclosure experimental group. The results indicated that there was not a significant difference between the pretest scores on the General Self-Efficacy Scale ( $M= 30.00$ ,  $SD= 4.59$ ) and the posttest scores on the General Self-Efficacy Scale ( $M= 30.64$ ,  $SD= 4.93$ ),  $t= -1.55$ ,  $p< .152$  (two-tailed). The scores suggested an increase in self-efficacy but did not reach a level of statistical significance.

A paired samples  $t$ - test was conducted on the control group's pretest and posttest scores on the GSE.. The results indicated that there was no significant difference between the General Self-Efficacy pretest score ( $M= 34.3$ ,  $SD= 3.66$ ) and General Self-Efficacy posttest score ( $M= 33.6$ ,  $SD= 3.26$ ),  $t= 1.08$   $p> .308$  (two-tailed). The scores suggested a decrease in self-efficacy but did not reach a level of statistical significance.

A one-way ANOVA was computed between the three groups using the pretest scores on General Self-Efficacy Scale. The results found a significant difference among the three groups [ $F(2, 29) = 4.2$ ,  $p= 0.024$ ] with the control group scoring higher than did the other two groups. Post hoc analyses (Tukey HSD) indicated that there was a significant difference between the factual disclosure group ( $M= 30$ ,  $SD= 4.6$ ) and the control group,  $p<.30$ .

A one-way analysis of covariance (ANCOVA) was computed between posttest scores for the three groups. The pretest score on the GSE was used as the covariate. The results indicated that there was no significant difference among the three groups,  $F(2, 29) = .154$ ,  $p = .858$ , partial eta squared = .011 on the GSE. There was a weak relationship between the pre-intervention and post-intervention scores on the GSE, as indicated by a partial eta squared value of .011.

*Conclusion.* The results confirmed the hypotheses formulated in regards to self-efficacy. That is implementing an expressive writing intervention did not demonstrate a statistical significant change in self-efficacy for study participants assigned to the emotional disclosure group compared to participants assigned to the factual disclosure group or the control group. The findings therefore, are not in accordance with Gersten and Baker's (2001) meta-analysis that looked at teaching expressive writing to students with disabilities. In their analysis of various studies they found evidence of positive effects of writing on students' sense of efficacy for being able to write. In a similar vein other studies (Cameron and Nichols, 1998 and King, 2001) suggest expressive writing may increase a sense of self-efficacy related to managing emotions. The current study examined general self-efficacy and may have attained positive results if a specific aspect of self-efficacy was examined.

#### Research Question 4

Research question four states, "What is the effect of expressive writing on perception of instructor in a sample of undergraduate human services students?"

*Findings.* A paired sample t-test was computed using the pretest and posttest scores for the emotional disclosure experimental group on the Source Credibility

Measure sub scales, which include the Competence Scale, the Caring Scale, and the Trustworthiness Scale. The results indicated there were no significant differences between the pretest and posttest scores on the sub-scales. (Competence Scale (M= 34.2, SD= 8.28) posttest score Competence Scale (M= 33.70, SD= 8.80),  $t = .469$ ,  $p > .651$  (two-tailed);, pretest Caring Scale (M= 29.00, SD= 12.70) posttest scores Caring Scale (M= 29.30, SD= 12.56),  $t(9) = -.282$ ,  $p > .785$  (two-tailed); pretest Trustworthiness Scale (M= 30.20, SD= 7.30) posttest score of the Trust-worthiness Scale (M= 29.00, SD= 6.83),  $t(9) = 2.03$ ,  $p > .074$  (two-tailed)). The means varied slightly between the pretest and posttest scores on the subscales of the Source Credibility Measure, but were not statistically significant.

A paired sample t-test was computed to determine if there was a significant difference between the pretest and posttest scores for the factual disclosure experimental group on the Source Credibility Measure sub scales. The results indicated there were no significant differences between the pretest and posttest scores on any of the subscales. (Pretest Competence Scale (M= 37.55, SD= 5.70) posttest score Competence Scale (M= 36.36, SD= 5.01),  $t = .920$ ,  $p < .379$  (two-tailed); pretest score Caring Scale (M= 33.64, SD= 6.27) posttest scores on the Caring Scale (M= 32.27, SD= 4.17),  $t = 1.261$ ,  $p > .236$  (two-tailed); pretest score Trustworthiness Scale (M= 33.09, SD= 5.45) posttest score of the Trustworthiness Scale (M= 32.45, SD= 6.49),  $t = .502$ ,  $p < .626$  (two-tailed) ). The means varied slightly between the pretest and posttest scores on the subscales of the Source Credibility Measure, but were not statistically significant.

A series of paired sample t-tests were computed to determine if there was a significant difference between the pretest and posttest scores on the sub scales of the

Source Credibility Measure for the non-writing control group. The results of the paired t-test indicate there was not a significant difference between the pretest and posttest scores on any of the subscales. (Pretest Competence Scale score (M= 36.09, SD= 4.68) posttest Competence Scale score (M= 36.00, SD= 6.77),  $t = .058$ ,  $p > .955$  (two-tailed); pretest Caring Scale score (M= 33.9, SD=7.12) posttest Caring Scale score (M= 34.4, SD= 6.20),  $t = -.374$ ,  $p > .716$  (two-tailed); pretest score Trustworthiness Scale (M= 31.7, SD= 3.61) posttest Trustworthiness Scale score (M= 31.3, SD= 3.66),  $t = .349$ ,  $p > .734$  (two-tailed) ). The means varied slightly between the pretest and posttest scores on the subscales of the Source Credibility Measure, but were not statistically significant.

A one-way ANOVA was conducted to determine if there was a significant difference between the three groups on the pretest mean scores on the Source Credibility Measure sub scales. There was no significant difference found on any of the subscales. (Competence sub scale,  $F(2, 29) = .734$ ,  $p = .49$ ; Caring sub scale,  $F(2, 29) = .968$ ,  $p = .39$ ; Trustworthiness,  $F(2, 29) = .700$ ,  $p = .50$ ).

A one-way analysis of covariance (ANCOVA) conducted between the three groups on the posttest scores on the Source Credibility Measure while controlling for the pretest scores. The pretest score on the SCM was used as the covariate in this analysis. The results indicate there were no significant differences found on the Competence sub-scale  $F(2, 29) = .124$ ,  $p = .88$ , partial eta squared = .009, there were no significant differences found on the Caring sub scale,  $F(2, 29) = .808$ ,  $p = .456$ ,  $\eta^2 = .055$  and there were no significant differences found on the Trustworthiness sub scale,  $F(2, 29) = .282$ ,  $p = .76$ , partial eta squared = .055. The results indicate there was a weak relationship

between the pre-intervention and post-intervention scores on the SCM subscales, as indicated by the partial eta squared values on each subscale.

*Conclusion.* The results confirmed the hypotheses formulated in regards to perception of instructor. That is implementing an expressive writing intervention did not demonstrate a statistical significant change in perception of instructor for study participants assigned to the emotional disclosure group compared to participants assigned to the factual disclosure group or the control group. The findings therefore, are in accordance with previous studies such as Teven and Mcroskey (1996) that posits students' rating of perception of instructor is primarily influenced by the student's perception of instructors caring. Although instructor caring was a variable examined, the design of the study did not directly manipulate the variable instructor caring. Therefore, the expressive writing intervention yielded no statistical significant difference between the three study groups on three subscales of the Source Credibility Measure.

### Discussion

Comparisons within the emotional disclosure experimental group between the pretest and posttest measure of stress, mood, self-efficacy, and perception of instructor were conducted. These within group comparisons did find a difference in the pretest and posttest scores on the PILL, MAACL-R, GSE, and SCM but the scores were not statistically significant. Comparisons within the factual disclosure experimental group between the pretest and posttest measure of stress, mood, self-efficacy, and perception of instructor were conducted. These within group comparisons did find a difference in the pretest and posttest scores on the PILL, MAACL-R, GSE, and SCM but the scores were not statistically significant. Comparisons within the non-writing control group between

the pretest and posttest measure of stress, mood, self-efficacy, and perception of instructor were conducted. These within group comparisons did find a difference in the pretest and posttest scores on the PILL, MAACL-R, GSE, and SCM but the scores were not statistically significant. Comparisons among three groups between the pretest and posttest measure of stress, mood, self-efficacy, and perception of instructor were conducted. These within group comparisons did find a difference in the pretest scores on the PILL, MAACL-R, and SCM but the scores were not statistically significant. The GSE pretest score reached the level of statistical significance, the control group scoring higher than the other two groups.

This study included multiple limitations that should be taken into consideration when interpreting the results. Internal validity is the ability of the research design to rule out or make alternative explanation of the results (Marczyk et al., 2005). Internal validity threats include “experimental procedures, treatments, or experiences of the participants that threaten the researcher’s ability to draw correct inferences from the data about the population in an experiment” (p. 162).

*Social desirability.* Social desirability may have affected participant’s written responses to the writing prompts and their responses to the MAACL-R, the GSE, and the PILL. Social desirability occurs when participants respond to instruments in socially acceptable ways rather than reporting their true feelings or beliefs (Vella-Broderick & White, 1997). Social desirable responses have “the potential to attenuate, inflate, or moderate variable relationships depending on the measures being used and the model under consideration” (Fisher & Katz, 2000, p. 106). Participants in this study may have been reactive to the instruments and the expressive writing being aware that writing

would be read. In attempt to reduce this, confidentiality and anonymity was ensured for this research study.

The PILL required participants to self-report on the frequency of experiencing specific physical symptoms, using a 5-point Likert-type scale ranging from 1 (have never or almost never experienced the symptom) to 5 (experienced more than once a week). Higher scores generally reflect more severe levels of physical symptomatology (Pennebaker, 1982). Due to this, participants may not have rated themselves as having symptoms that may be embarrassing to report.

The MAACL-R, assesses affective mood state (Lubin & Zuckerman, 1999) It is a self report measure that consists of 132 adjectives that refer to report of current mood. The measure designed for a reading level of sixth-grade requires approximately five minutes to complete. Due the number of items, participants may not have rated themselves as they actually view their mood.

*Selection.* The majority of participants who comprised this sample were female (99%). This study was primarily limited by its small sample size. The study included 32 participants assigned to three groups. There were 11 participants in each of the two experimental groups and 10 participants in the control group. The small sample size increased the probability that differences would not be detected at the level of statistical significance.

*External Validity Threats.* External validity is how generalizable the results of the research study are (Marczyk et al., 2005). According to Creswell (2009), external validity threats “arise when experimenters draw incorrect inferences from the sample data to other persons, other settings, and past or future situations” (p. 162). The participants



for this study were recruited from five undergraduate classes within the Counseling and Human Services Department, which limits the ability to generalize results to a larger population of college students and the general population.

*Instrumentation.* Instrumentation threats may also exist within this study. This study is not longitudinal in design. Therefore, taking the same measure multiple times within a three-day period may affect scores as practice, memory, research expectations, and sensitization may develop. The study writing prompts may also be a limitation of this study. In Pennebaker and Beal's (1986) original writing protocol participants wrote based on prompts that asked that they disclose a traumatic life event. In the current study, the researcher did not include prompts that asked participants to write about a traumatic event as prompt help was not available if psychological distress was to occur. The writing prompts for this study may not have been sufficient to induce feelings or emotions about their time as a student. It seems this limitation could not be avoided due to the data collection method. Students were not in a controlled environment when writing based on the prompts. The researcher was concerned about student's reactions to writing about a trauma in an uncontrolled environment. The data collection method used in this study may have affected the completion of all study materials. Due to data being collected by a web based interface study participants completed study related materials independent of the researcher and in some cases did not remember to log in to participate in the study or lost their log in information. Additionally, some participants had technical difficulties with the software, which lead to their not completing all three days of the study.

Another limitation to this study was the time period for data collection. According to Pennebaker and Beal's (1986) original protocol data was collected over three consecutive days. Some potential study participants declined participation due to unavailability to complete study instruments and writing for three consecutive days.

#### Implications for Further Research

This study explored expressive writing's effect on four constructs that have been correlated with successful academic outcome: stress, mood, self-efficacy, and perception of instructor. Expressive writing studies have been conducted to examine its efficacy with clinical as well as non-clinical populations with the most significant improvement being with physical ailments versus psychological ailments. These studies include the efficacy of expressive writing with: asthma and rheumatoid arthritis patients (Kelly, Lumley, & Leisen, 1997), insomnia patients (Harvey & Farrell, 2003), patients with rumination and depression symptoms (Gortner, Rude, & Pennebaker, 2006), individuals recall of collective trauma (Fernandez & Paez, 2008), and male college students with restrictive emotionality (Wong and Rochlen, 2009). In studying the effects of expressive writing on stress, mood, self-efficacy, and perception of instructor, this study added to the body of research on expressive writing as an intervention with non-clinical populations. Despite the lack of statistical significance, the results of this study indicate that the expressive writing intervention demonstrated a trend toward statistical significance.

Results from the current study imply that further study is needed with expressive writing in non-clinical populations. An important area for exploration is to examine how gender may play a role in the efficacy of expressive writing. In the current study most of the participants were female. Balancing the gender of participants may improve study

results. Another area for future study is to modify the expressive writing protocol to allow study participants to choose from several prompts. In doing so, study participants may be more inclined to express emotions and feelings according to the writing prompt. It is suggested that future studies collect data directly from participants rather using a web-based interface. Study participants may be more inclined to complete study materials if they have to submit the documents directly to the researcher such as in a classroom setting. Finally, conducting a longitudinal study of expressive writing may add to the body of knowledge that seeks to explore variations of the original expressive writing protocol. For example, having study participants write once per week for six weeks may demonstrate efficacy in non-clinical populations versus writing for only three days.

#### Implications for Counselor Educators

The current study found that expressive writing could be successfully implemented as an intervention with students. This should be of particular interest to Counselor Educators. Davis (2004) points to the fact that creative approaches in counseling practice have been steadily emerging as evidenced by a division in the American Counseling Association called the Association for Creativity in Counseling. Creativity in counseling espouses the use of creative and expressive approaches to the practice of counseling. Perhaps counselor educators may want to begin exposing counselors in training to expressive writing as an adjunct to counseling as well as a self-care tool. It is well documented in the literature that the problem of counselor impairment is often a result of anxiety, job stress, and burnout, (Young & Lambie, 2007; O'Halloran & Linton, 2000; Stebnicki, 2000) For instance, counselor educators could

have students use expressive writing as a form of journaling to reduce the stress experienced by many graduate students. Counselor educators can demonstrate the use of expressive writing with clients in individual sessions or with groups. As emphasized by Witmer & Young (1996) counselor educators should also attempt to systematically incorporate a wellness model in counselor education and equip students with these skills during their training. Hanna and Bemark (1997) posit that counselor effectiveness depends more on personal characteristics of the counselor than on training, and theory. Therefore, greater emphasis needs to be placed on helping counselor trainees to address personal development through wellness strategies such as expressive writing.

### Conclusion

The purpose of this study was to investigate the effect of expressive writing on stress, mood, self-efficacy, and perception of instructor in undergraduate Human Services students. Prior to participants responding to a writing prompt, demographic data including scores on the MAACL-R, PILL, SCM and GSE, was obtained. Data was collected for three consecutive days and finally posttest measures were administered. Although the study did not reveal any statistically significant results, the study contributed to the literature on expressive writing in academic settings. The dependent variables stress, mood, self-efficacy, and perception of instructor are all variables the literature indicates has an effect on academic outcome (Zajacova et. Al, 2005, Wilson, 2006, Teven and McCroskey, 1996). Therefore, future research, including quantitative and qualitative studies is recommended to explore the efficacy of expressive writing in post-secondary education settings and the effect of expressive writing on academic outcome.

## REFERENCES

- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215. doi:10.1037/0033-295X.84.2.191
- Bandura, A. (1993). Perceived Self-Efficacy in Cognitive Development and Functioning. *Educational Psychologist*, 28(2), 117-148. doi:10.1207/s15326985ep2802\_3
- Brann, M., Edwards, C., & Myers, S. (2005). Perceived Instructor Credibility and Teaching Philosophy. *Communication Research Reports*, 22(3), 217-226. doi:10.1080/00036810500230628
- Brown, S., Lent, R. W., & Larkin, K. C. (1989). Self-efficacy as a moderator of scholastic aptitude-academic performance relationships. *Journal of Vocational Behavior*, 35(1), 64-75. doi:10.1016/0001-8791(89)90048-1
- Cameron, L. D., & Nicholls, G. (1998). Expression of stressful experiences through writing: Effects of a self-regulation manipulation for pessimists and optimists. *Health Psychology*, 17(1), 84-92. doi:10.1037/0278-6133.17.1.84
- Chung, C. K., & Pennebaker, J. W. (2008). Revealing dimensions of thinking in open-ended self-descriptions: An automated meaning extraction method for natural language. *Journal of Research in Personality*, 42(1), 96-132. doi:10.1016/j.jrp.2007.04.006
- Clark, L. A., Watson, D., & Mineka, S. (1994). Temperament, personality, and mood and anxiety disorders. *Journal of Abnormal Psychology*, 1(103), 103-116.
- Creswell, J. (2009). *Research design : qualitative, quantitative, and mixed methods approaches* (3rd ed.). Thousand Oaks Calif.: Sage Publications.
- Davis, K. M. (2008). Teaching a course in creative approaches in counseling with

- children and adolescents. *Journal of Creative in Mental Health*, 3(3), 220-232.
- Dimitrov, D., & Rumrill Jr, P.D. (2003). Pretest-posttest designs and measurement of change. *Work: A Journal of Prevention, Assessment and Rehabilitation*, 20(2), 159-165. Retrieved from [http://scholar.google.com/scholar.bib?q=info:s7BLxEdLzBMJ:scholar.google.com/&output=citation&hl=en&as\\_sdt=8000000000000000&ct=citation&cd=0](http://scholar.google.com/scholar.bib?q=info:s7BLxEdLzBMJ:scholar.google.com/&output=citation&hl=en&as_sdt=8000000000000000&ct=citation&cd=0)
- Dunham, J. (1992). *Stress in teaching* (2nd ed.). London: Routledge.
- D'Zurilla, T. J., & Sheedy, C. F. (1991). Relation between social problem-solving ability and subsequent level of psychological stress in college students. *Journal of Personality and Social Psychology*, 61(5), 841-846. doi:10.1037/0022-3514.61.5.841
- Estrada, C. A., Isen, A. M., & Young, M. J. (1994). Positive affect improves creative problem solving and influences reported source of practice satisfaction in physicians. *Motivation and Emotion*, 18(4), 285-299. doi:10.1007/BF02856470
- Expression of stressful experiences through writing: Effects of a self-regulation manipulation for pessimists and optimists. (n.d.). .
- Fernández, I., & Páez, D. (2008). The benefits of expressive writing after the Madrid terrorist attack: Implications for emotional activation and positive affect. *British Journal of Health Psychology*, 13(1), 31-34. doi:10.1348/135910707X251234
- Finn, A., Schrodtt, P., Witt, P., Elledge, N., Jernberg, K., & Larson, L. (2009). A Meta-Analytical Review of Teacher Credibility and its Associations with Teacher Behaviors and Student Outcomes. *Communication Education*, 58(4), 516-537. doi:10.1080/03634520903131154

- Fisher, R. J., & Katz, J. E. (2000). Social-desirability bias and the validity of self-reported values. *Psychology and Marketing*, 17(2), 105-120. doi:10.1002/(SICI)1520-6793(200002)17:2<105::AID-MAR3>3.0.CO;2-9
- Foa, E. B., & Rothbaum, B. O. (1998). *Treating the trauma of rape*. New York: Guildford Press.
- Frisina, P. G., Borod, J. C., & Lepore, S. J. (2004). A Meta-Analysis of the Effects of Written Emotional Disclosure on the Health Outcomes of Clinical Populations., *The Journal of Nervous and Mental Disease*(Volume 192(9)), 629-634.
- Georges, E. (1995). A Cultural and Historical Perspective on Confession. In J. Pennebaker (Ed.), *Emotion, disclosure & health* (pp. 11-22). Washington DC: American Psychological Association.
- Gersten, R., & Baker, S. (2001). Teaching expressive writing to students with learning disabilities: A meta-analysis. *The Elementary School Journal*, 101(3), 251-272.
- Gore, P. A. (2006). Academic Self-Efficacy as a Predictor of College Outcomes: Two Incremental Validity Studies. *Journal of Career Assessment*, 14(1), 92-115. doi:10.1177/1069072705281367
- Gortner, E., Rude, S., & Pennebaker, J. (2006). Benefits of Expressive Writing in Lowering Rumination and Depressive Symptoms. *Behavior Therapy*, 37(3), 292-303. doi:10.1016/j.beth.2006.01.004
- Greenburg, Melanie A., & Stone, Arthur A. (1992). Emotional disclosure about traumas and its relation to health: effects of previous disclosure and trauma severity. *Journal of Personality and Social Psychology*, 63(1), 75-84.
- Hackett, G., Betz, N., Casas, M. J., & Rocha-Singh, I. A. (1992). Gender, ethnicity, and

- social cognitive factors predicting the academic achievement of students in engineering. *Journal of Counseling Psychology*, 39(4), 527-538.
- Hanna, F. J., & Bemak, F. (1997). The quest for identity in the counseling profession. *Counselor Education and Supervision*, 36, 194-206.
- Harber, K. D., & Pennebaker, J. W. (1992). Overcoming Traumatic Memories. In S. Christianson (Ed.), *The handbook of emotion and memory* (pp. 359-386). Hillsdale N.J.: L. Erlbaum Associates.
- Harvey, A., & Farrell, C. (2003). The Efficacy of a Pennebaker-Like Writing Intervention for Poor Sleepers. *Behavioral Sleep Medicine*, 1(2), 115-124.  
doi:10.1207/S15402010BSM0102\_4
- Hendrix, K. G. (1998). Student perception of the influence of race on professor credibility. *Journal of Black Studies*, 28(6), 738-763.
- Heppner, P. (1999). *Research design in counseling* (2nd ed.). Belmont CA: Brooks/Cole/Wadsworth.
- Hettner, C. M., & Ballif, B. L. (1981). Effects of mood on learning. *Journal of Educational Psychology*, 73(4), 505-508. doi:10.1037/0022-0663.73.4.505
- Hirsch, J. K., & Ellis, J. B. (1996). Differences in life stress and reasons for living among college suicide ideators and non-ideators. *College Student Journal*, 30, 377-386.
- Isen, A. M. (2000). Some perspectives on positive affect and self-regulation. *Psychological Inquiry*, 11(3), 184 - 187.
- Jerusalem, M., & Schwarzer, R. (1981). The general self-efficacy scale, 15, 2006.
- Kelley, J. E., Lumley, M. A., & Leisen, J. C. (1997). Health Effects of Emotional



- Disclosure in Rheumatoid Arthritis Patients. *Health Psychology: Official Journal of the Division of Health Psychology, American Psychological Association*, 16(No. 4), 331-340.
- Koopman, C., Ismailji, T., Holmes, D., Classen, C. C., Palesh, O., & Wales, T. (2005). The Effects of Expressive Writing on Pain, Depression and Posttraumatic Stress Disorder Symptoms in Survivors of Intimate Partner Violence. *J Health Psychol*, 10(2), 211-221. doi:10.1177/1359105305049769
- Lent, R. W., Brown, S. D., & Larkin, K. C. (1984). Relation of self-efficacy expectations to academic achievement and persistence. *Journal of Counseling Psychology*, 31(3), 356-362. doi:10.1037/0022-0167.31.3.356
- Lepore, S., & Greenberg, M. (2002). Mending broken hearts: effects of expressive writing on mood, cognitive processing, social adjustment and health following a relationship breakup. *Psychology & Health*, 17(5), 547-560. Retrieved from <http://search.ebscohost.com.proxy.lib.odu.edu/login.aspx?direct=true&db=rzh&AN=2004167453&site=ehost-live>
- Lepore, S., Smyth, J., Greenberg, M. A., & Bruno, M. (2002). Epressive writing and health: self-regulation of emotion-related experience, physiology, and behavior. In *The writing cure : how expressive writing promotes health and emotional well-being* (1st ed.). Washington D.C.: American Psychological Association.
- Lubin, B., & Zuckerman, M. (1999). *Manual for the MAACL-R Multiple Affect Adjective Check List- Revised*. EdITS/Educational and Industrial Testing Service.
- Lumley, M. A., & Provenzano, K. M. (2003). Stress management through written emotional disclosure improves academic performance among college students

with physical symptoms. *Journal of Educational Psychology*, 95(3), 641-649.

doi:10.1037/0022-0663.95.3.641

Marczyk, G., Dematteo, D., & Festinger, D. (2005). *Essentials of research design and methodology*. Hoboken N.J.: John Wiley & Sons.

Martin, M., & Myers, S. (2006). Students' Communication Traits and Their Out-of-Class Communication with Their Instructors. *Communication Research Reports*, 23(4), 283-289. doi:10.1080/08824090600962599

McCroskey, J., Holdridge, W., & Toomb, J. K. (1974). An instrument for measuring the source credibility of basic speech communication instructors. *Communication Education*, 23(1), 26-33. doi:10.1080/03634527409378053

McCroskey, J., & Teven, J. (1999). Goodwill: A reexamination of the construct and its measurement. *Communication Monographs*, 66(1), 90-103.  
doi:10.1080/03637759909376464

McCroskey, J., Valencic, K. M., & Richmond, V. P. (2004). Toward a General Model of Instructional Communication. *Communication Quarterly*, 52(3), 197-210.

Retrieved from

<http://gx6ac7lq4l.scholar.serialssolutions.com/?sid=google&auinit=JC&aulast=McCroskey&atitle=Toward+a+general+model+of+instructional+communication&id=doi:10.1080/01463370409370192&title=Communication+quarterly&volume=52&issue=3&date=2004&spage=197&issn=0146-3373>

McGuire, K. M. B., Greenberg, M. A., & Gevirtz, R. (2005). Autonomic Effects of Expressive Writing in Individuals with Elevated Blood Pressure. *Journal of Health Psychology*, 10(2), 197-209. doi:10.1177/1359105305049767

- Meads, C., & Nouwen, A. (2005). Does emotional disclosure have any effect? A systematic review of the literature with meta-analyses. *International Journal of Technology Assessment in Health Care*, 21(02), 153-164.
- MrCroskey, J. C. (1998). *An Introduction to communication in the classroom* (2nd ed.). Acton, MA: Tapestry Press.
- Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of Counseling Psychology*, 38(1), 30-38.
- Myers, S. (2004). The relationship between perceived instructor credibility and college student in-class and out-of-class communication. *Communication Reports*, 17(2), 129-137. Retrieved from <http://www.informaworld.com.proxy.lib.odu.edu/smpp/content~db=all~content=a911572660>
- Nandagopal, S. (2008). The Use of Written Expression of Emotion Paradigm as a Tool to Reduce Stress among Indian International Students. *Psychology & Developing Societies*, 20(2), 165-181. doi:10.1177/097133360802000202
- O'Halloran, T., & Linton, J. (2000). Stress on the job: Self-care resources for counselors. *Journal of Mental Health Counseling*, 22, 354-364.
- Patton, T. O. (1999). Ethnicity and Gender: An Examination of Its Impact on Instructor Credibility in the University Classroom. *Howard Journal of Communication*, 10(2), 123-144. doi:10.1080/106461799246852
- Pennebaker, J. W. (1994). Some suggestions for running a confession study. Retrieved from <http://homepage.psy.utexas.edu/homepage/faculty/Pennebaker/Reprints>

- Pennebaker, J. (1982). *The psychology of physical symptoms*. New York: Springer-Verlag.
- Pennebaker, J. (1997). *Opening up : the healing power of expressing emotions*. New York: Guildford Press.
- Pennebaker, J. W. (1985). Traumatic experience and psychosomatic disease: Exploring the roles of behavioural inhibition, obsession, and confiding. *Canadian Psychology/Psychologie canadienne*, 26(2), 82-95. doi:10.1037/h0080025
- Pennebaker, J. W., & Beall, S. K. (1986). Confronting a traumatic event: Toward an understanding of inhibition and disease. *Journal of Abnormal Psychology*, 95(3), 274-281. doi:10.1037/0021-843X.95.3.274
- Pennebaker, J. W., Huges, C. F., & Heeron, R. C. (1987). The psychophysiology of confession: linking inhibitory and psychosomatic processes. Retrieved August 8, 2010, from <http://cat.inist.fr/?aModele=afficheN&cpsidt=7478471>
- Pennebaker, J. W., & Seagal, J. D. (1999). Forming a story: The health benefits of narrative. *Journal of Clinical Psychology*, 55(10), 1243-1254. doi:Article
- Pierceall, E., & Keim, M. (2007). Stress and Coping Strategies Among Community College Students. *Community College Journal of Research and Practice*, 31(9), 703-712. doi:10.1080/10668920600866579
- Pintrich, P. R., & Schunk, D. H. (1995). Understanding self-regulated learning. *New Directions for Teaching and Learning*, 1995(63), 3-12. doi:10.1002/tl.37219956304
- Reio, T. G., Marcus, R. F., & Sanders-Reio, J. (2009). Contribution of Student and Instructor Relationships and Attachment Style to School Completion. *The Journal*

- of Genetic Psychology*, 170(1), 53-72. doi:10.3200/GNTP.170.1.53-72
- Ross, S., Niebling, B. C., & Heckert, Teresa M. (1999). Sources of stress among college students. *College Student Journal*, 33(2), 312-317.
- Russ, T., Simonds, C., & Hunt, S. (2002). Coming out in the classroom..An occupational hazard?: The influence of sexual orientation on teacher credibility and perceived student learning. *Communication Education*, 51(3), 311-324.
- Russell, J. A., & Ridgeway, D. (1983). Dimensions underlying children's emotion concepts. *Developmental Psychology*, (19), 795-804.
- Saks, A. M. (1995). Longitudinal field investigation of the moderating and mediating effects of self-efficacy on the relationship between training and newcomer adjustment. *Journal of Applied Psychology*, 80(2), 211-215. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/7737934>
- Schunk, D. H. (1991). Self-Efficacy and Academic Motivation. *Educational Psychologist*, 26(3), 207. doi:10.1207/s15326985ep2603&4\_2
- Schwarzer, R. (1992). *Self-efficacy : thought control of action*. Washington: Hemisphere Pub. Corp.
- Schwarzer, R., & Born, A. (1997). Optimistic self-beliefs: Assessment of general perceived self-efficacy in thirteen cultures. *World Psychology*, 3(1-2), 177-190.
- Selye, H. (1956). *The stress of life*. New York: McGraw-Hill.
- Selye, H. (1974). *Stress without distress*. (1st ed.). Philadelphia: Lippincott.
- Sgan-Cohen, H. D., & Lowental, U. (1988). Sources of stress among Israeli dental students. *The Journal of the American College Health Association*, 36, 317-321.
- Sloan, D. M., & Marx, B. P. (2004). A Closer Examination of the Structured Written

- Disclosure Procedure. *Journal of Consulting and Clinical Psychology*, 72(2), 165-175. doi:10.1037/0022-006X.72.2.165
- Smyth, J., Hockemeyer, J. R., & Tulloch, H. (2008). Expressive writing and post-traumatic stress disorder: effects on trauma symptoms, mood states and cortisol reactivity. *British Journal of Health Psychology*, 13, 85.
- Smyth, J., & Greenberg, M. (2000). Scriptotherapy: The effects of writing about traumatic events. In *Empirical studies in psychoanalytic theories* (Vol. 9, pp. 121-164). Washington D.C.: American Psychological Association.
- Smyth, J., True, N., & Souto, J. (2001). Effects of Writing About Traumatic Experiences: The Necessity for Narrative Structuring. *Journal of Social and Clinical Psychology*, 20(2), 161-172. doi:10.1521/jscp.20.2.161.22266
- Snider, J. G., & Osgood, C. E. (1969). *Semantic differential technique*. Aldine Pub. Co.
- Some suggestions for running a confession study - Google Scholar. (n.d.). Retrieved November 17, 2010, from [http://scholar.google.com/scholar?hl=en&q=Some+suggestions+for+running+a+confession+study&btnG=Search&as\\_sdt=80000000000000&as\\_ylo=&as\\_vis=0](http://scholar.google.com/scholar?hl=en&q=Some+suggestions+for+running+a+confession+study&btnG=Search&as_sdt=80000000000000&as_ylo=&as_vis=0)
- Spera, S., Buhrfeind, E. D., & Pennebaker, J. W. (n.d.). Expressive Writing and Coping with Job Loss. *The Academy of Management Journal*, 37(3), 772-733.
- Stanton, A. L., Danoff-Burg, S., Cameron, C.L., Snider, P., & Kirk, S. B. (1999). Social comparison and adjustment to breast cancer: An experimental examination of upward affiliation and downward evaluation. *Health Psychology*, 18, 151-158.
- Statistical Package for the social sciences*. (n.d.). SPSS.
- Stebnicki, M. A. (2000a). Stress and grief reactions among rehabilitation professionals:

- Dealing effectively with empathy fatigue. *Journal of Rehabilitation*, 66, 23-29.
- Stebnicki, M. A. (2000b). Stress and grief reactions among rehabilitation professionals: dealing effectively with empathy fatigue. *The Journal of Rehabilitation*, 66.
- Stress on the job: Self-care resources for counselors. (2000). *Journal of Mental Health Counseling*, 22, 354-364.
- Teven, Jason J., & McCroskey, James C. (1997). The relationship of perceived teacher caring with student learning and teacher evaluation. *Communication Education*, 46(1), 9.
- Thayer, R. (1989). *The biopsychology of mood and arousal*. New York: Oxford University Press.
- Towbes, L. C., & Cohen, L. H. (1996). Chronic stress in the lives of college students: Scale development and prospective prediction of distress. *Journal of Youth and Adolescence*, 25(2), 199-217. doi:10.1007/BF01537344
- Turman, P., & Schrod, P. (2005a). The influence of instructional technology use on students' affect: Do course designs and biological sex make a difference? *Communication Studies*, 56(2), 109-129. doi:10.1080/00089570500078726
- Turman, P., & Schrod, P. (2005b). The influence of instructional technology use on students' affect: Do course designs and biological sex make a difference? *Communication Studies*, 56(2), 109-129. doi:10.1080/00089570500078726
- Urtre, S., Dona, B. G., Sud, S., & Schwarzer, R. (2002). Is general self-efficacy a universal construct? Psychometric findings from 25 countries. *European Journal of Psychological Assessment*, 18(3), 242-251.
- Vella-Brodrick, D. A., & White, V. (1997). Response set of social desirability in relation

- to the mental, physical and spiritual well-being scale. *Psychological Reports*, 81(1), 127-130.
- W. Pennebaker and Martha E. Francis, J. (1996). Cognitive, Emotional, and Language Processes in Disclosure. *Cognition & Emotion*, 10(6), 601-626.  
doi:10.1080/026999396380079
- Walker, B. L., Nail, L. M., & Croyle, R. T. (1999). Does emotional expression make a difference in reactions to breast cancer? *Oncology Nursing Forum*, 26(6), 1025-1032. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/10420420>
- Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin*, (98), 219-235.
- Watson, D. (2000). *Mood and temperament*. New York: Guilford Press.
- Watson, D., & Clark, L. A. (1997). Measurement and Mismeasurement of Mood: Recurrent and Emergent Issues. *Journal of Personality Assessment*, 68(2), 267-297.
- Witmer, J. M., & Young, M. E. (1996). Preventing counselor impairment: A wellness approach. *Journal of Humanistic Education and Development*, 34, 141-156.
- Wong, Y. J., & Rochlen, A. B. (2009). Potential benefits of expressive writing for male college students with varying degrees of restrictive emotionality. *Psychology of Men & Masculinity*, 10(2), 149-159. doi:10.1037/a0015041
- Wright, J. J. (1964). Environmental stress evaluation in a student community. *The Journal of the American College Health Association*, 5(12), 325-336.
- Young, M. E., & Lambie, G. W. (2007). Wellness in school and mental health settings. *Journal of Humanistic Counseling, Education and Development*, 46, 9-16.



Zajacova, A., Lynch, S. M., & Espenshade, T. J. (2005). Self-Efficacy, Stress, and Academic Success in College. *Research in Higher Education*, 46(6), 677-706.

doi:10.1007/s11162-004-4139-z

Zuckerman, M., & Lubin, B. (1988). The Multiple Affect Adjective Checklist-Revised. *Dictionary of behavioral assessment techniques*.

**APPENDICES**

## APPENDIX A: MULTIPLE AFFECT ADJECTIVE CHECKLIST- REVISED

	A	D	F	PA	SE	Dys	PASS	NO CHECKED
Raw Score								
T - Score								

### Multiple Affect Adjective Check List - R (MAACL-R)

- |                                       |  |                                      |  |
|---------------------------------------|--|--------------------------------------|--|
| 1. <input type="radio"/> active       | 34. <input type="radio"/> devoted      | 57. <input type="radio"/> interested | 100. <input type="radio"/> satisfied     |
| 2. <input type="radio"/> adventurous  | 35. <input type="radio"/> disagreeable | 58. <input type="radio"/> irritated  | 101. <input type="radio"/> secure        |
| 3. <input type="radio"/> affectionate | 36. <input type="radio"/> discontented | 59. <input type="radio"/> jealous    | 102. <input type="radio"/> snaky         |
| 4. <input type="radio"/> afraid       | 37. <input type="radio"/> discouraged  | 60. <input type="radio"/> joyful     | 103. <input type="radio"/> shy           |
| 5. <input type="radio"/> agitated     | 38. <input type="radio"/> disgusted    | 61. <input type="radio"/> kindly     | 104. <input type="radio"/> soothed       |
| 6. <input type="radio"/> agreeable    | 39. <input type="radio"/> displeased   | 62. <input type="radio"/> lonely     | 105. <input type="radio"/> steady        |
| 7. <input type="radio"/> aggressive   | 40. <input type="radio"/> energetic    | 63. <input type="radio"/> lost       | 106. <input type="radio"/> stubborn      |
| 8. <input type="radio"/> alive        | 41. <input type="radio"/> enraged      | 64. <input type="radio"/> loving     | 107. <input type="radio"/> stormy        |
| 9. <input type="radio"/> alone        | 42. <input type="radio"/> enthusiastic | 65. <input type="radio"/> low        | 108. <input type="radio"/> strong        |
| 10. <input type="radio"/> amiable     | 43. <input type="radio"/> fearful      | 66. <input type="radio"/> lucky      | 109. <input type="radio"/> suffering     |
| 11. <input type="radio"/> amused      | 44. <input type="radio"/> fine         | 67. <input type="radio"/> mad        | 110. <input type="radio"/> sullen        |
| 12. <input type="radio"/> angry       | 45. <input type="radio"/> fit          | 68. <input type="radio"/> mean       | 111. <input type="radio"/> sunk          |
| 13. <input type="radio"/> annoyed     | 46. <input type="radio"/> forlorn      | 69. <input type="radio"/> meek       | 112. <input type="radio"/> sympathetic   |
| 14. <input type="radio"/> awful       | 47. <input type="radio"/> frank        | 70. <input type="radio"/> merry      | 113. <input type="radio"/> tame          |
| 15. <input type="radio"/> bashful     | 48. <input type="radio"/> free         | 71. <input type="radio"/> mild       | 114. <input type="radio"/> tender        |
| 16. <input type="radio"/> bitter      | 49. <input type="radio"/> friendly     | 72. <input type="radio"/> miserable  | 115. <input type="radio"/> tense         |
| 17. <input type="radio"/> blue        | 50. <input type="radio"/> frightened   | 73. <input type="radio"/> nervous    | 116. <input type="radio"/> terrible      |
| 18. <input type="radio"/> bored       | 51. <input type="radio"/> furious      | 74. <input type="radio"/> obliging   | 117. <input type="radio"/> terrified     |
| 19. <input type="radio"/> calm        | 52. <input type="radio"/> lively       | 75. <input type="radio"/> offended   | 118. <input type="radio"/> thoughtful    |
| 20. <input type="radio"/> cautious    | 53. <input type="radio"/> gentle       | 76. <input type="radio"/> outraged   | 119. <input type="radio"/> timid         |
| 21. <input type="radio"/> cheerful    | 54. <input type="radio"/> glad         | 77. <input type="radio"/> panicky    | 120. <input type="radio"/> tormented     |
| 22. <input type="radio"/> clean       | 55. <input type="radio"/> gloomy       | 78. <input type="radio"/> patient    | 121. <input type="radio"/> understanding |
| 23. <input type="radio"/> complaining | 56. <input type="radio"/> good         | 79. <input type="radio"/> peaceful   | 122. <input type="radio"/> unhappy       |
| 24. <input type="radio"/> contented   | 57. <input type="radio"/> good-natured | 80. <input type="radio"/> pleased    | 123. <input type="radio"/> unsociable    |
| 25. <input type="radio"/> contrary    | 58. <input type="radio"/> grim         | 81. <input type="radio"/> pleasant   | 124. <input type="radio"/> upset         |
| 26. <input type="radio"/> cool        | 59. <input type="radio"/> happy        | 82. <input type="radio"/> polite     | 125. <input type="radio"/> vexed         |
| 27. <input type="radio"/> cooperative | 60. <input type="radio"/> healthy      | 83. <input type="radio"/> powerful   | 126. <input type="radio"/> warm          |
| 28. <input type="radio"/> critical    | 61. <input type="radio"/> hopeless     | 84. <input type="radio"/> quiet      | 127. <input type="radio"/> whole         |
| 29. <input type="radio"/> cross       | 62. <input type="radio"/> hostile      | 85. <input type="radio"/> reckless   | 128. <input type="radio"/> wild          |
| 30. <input type="radio"/> cruel       | 63. <input type="radio"/> impatient    | 86. <input type="radio"/> rejected   | 129. <input type="radio"/> willful       |
| 31. <input type="radio"/> daring      | 64. <input type="radio"/> incensed     | 87. <input type="radio"/> rough      | 130. <input type="radio"/> wilted        |
| 32. <input type="radio"/> desperate   | 65. <input type="radio"/> indignant    | 88. <input type="radio"/> sad        | 131. <input type="radio"/> worrying      |
| 33. <input type="radio"/> destroyed   | 66. <input type="radio"/> inspired     | 89. <input type="radio"/> safe       | 132. <input type="radio"/> young         |

**APPENDIX B: GENERAL SELF-EFFICACY SCALE**

## The General Self-Efficacy Scale

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Please use the following scale to rate yourself in regards to the following statements.

1 = Not at all true      2 = Hardly true      3 = Moderately true      4 = Exactly

- \_\_\_\_\_ 1. I can manage to solve difficult problems if I try hard enough.
- \_\_\_\_\_ 2. If someone opposes me, I can find the means and ways to get what I want.
- \_\_\_\_\_ 3. It is easy for me to stick to my aims and accomplish my goals.
- \_\_\_\_\_ 4. I am confident that I could deal efficiently with unexpected events.
- \_\_\_\_\_ 5. Thanks to my resourcefulness, I know how to handle unforeseen situations.
- \_\_\_\_\_ 6. I can solve most problems if I invest the necessary effort.
- \_\_\_\_\_ 7. I can remain calm when facing difficulties because I can rely on my coping abilities.
- \_\_\_\_\_ 8. When I am confronting with a problem, I can usually find several solutions.
- \_\_\_\_\_ 9. If I am in trouble, I can usually think of a solution.
- \_\_\_\_\_ 10. I can usually handle whatever comes my way.

## APPENDIX C: SOURCE CREDIBILITY MEASURE

### Source Credibility Measure

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**Instructions:** On the scales below, indicate your feelings about your course instructor. Numbers 1 and 7 indicate a very strong feeling. Numbers 2 and 6 indicate a strong feeling. Numbers 3 and 5 indicate a fairly weak feeling. Number 4 indicates you are undecided.

- 1) Intelligent 1 2 3 4 5 6 7 Unintelligent
- 2) Untrained 1 2 3 4 5 6 7 Trained
- 3) Cares about me 1 2 3 4 5 6 7 Doesn't care about me
- 4) Honest 1 2 3 4 5 6 7 Dishonest
- 5) Has my interests at heart 1 2 3 4 5 6 7 Doesn't have my interests at heart
- 6) Untrustworthy 1 2 3 4 5 6 7 Trustworthy
- 7) Inexpert 1 2 3 4 5 6 7 Expert
- 8) Self-centered 1 2 3 4 5 6 7 Not self-centered
- 9) Concerned with me 1 2 3 4 5 6 7 Not concerned with me
- 10) Honorable 1 2 3 4 5 6 7 Dishonorable
- 11) Informed 1 2 3 4 5 6 7 Uninformed
- 12) Moral 1 2 3 4 5 6 7 Immoral
- 13) Incompetent 1 2 3 4 5 6 7 Competent
- 14) Unethical 1 2 3 4 5 6 7 Ethical
- 15) Insensitive 1 2 3 4 5 6 7 Sensitive
- 16) Bright 1 2 3 4 5 6 7 Stupid
- 17) Phony 1 2 3 4 5 6 7 Genuine
- 18) Not understanding 1 2 3 4 5 6 7 Understanding

McCroskey, J. C., & Teven, J. J. (1999). Goodwill: A reexamination of the construct and its measurement. *Communication Monographs*, 66, 90-103.

## APPENDIX D: PENNEBAKER INVENTORY OF LIMBIC LANGUIDNESS

### The PILL

Several common symptoms or bodily sensations are listed below. Most people have experienced most of them at one time or another. We are currently interested in finding out how prevalent each symptom is among various groups of people. On the page below, write how frequently you experience each symptom. For all items, use the following scale:

A	B	C	D	E
Have never or almost never experienced the symptom	Less than 3 or 4 times per year	Every month or so	Every week or so	More than once every week

For example, if your eyes tend to water once every week or two, you would answer "D" next to question #1.

- |   |   |
|---|---|
| <input type="checkbox"/> 1. Eyes water                              | <input type="checkbox"/> 28. Swollen joints                           |
| <input type="checkbox"/> 2. Itchy eyes or skin                      | <input type="checkbox"/> 29. Stiff or sore muscles                    |
| <input type="checkbox"/> 3. Ringing in ears                         | <input type="checkbox"/> 30. Back pains                               |
| <input type="checkbox"/> 4. Temporary deafness or hard of hearing   | <input type="checkbox"/> 31. Sensitive or tender skin                 |
| <input type="checkbox"/> 5. Lump in throat                          | <input type="checkbox"/> 32. Face flushes                             |
| <input type="checkbox"/> 6. Choking sensations                      | <input type="checkbox"/> 33. Tightness in chest                       |
| <input type="checkbox"/> 7. Sneezing spells                         | <input type="checkbox"/> 34. Skin breaks out in rash                  |
| <input type="checkbox"/> 8. Running nose                            | <input type="checkbox"/> 35. Acne or pimples on face                  |
| <input type="checkbox"/> 9. Congested nose                          | <input type="checkbox"/> 36. Acne/pimples other than face             |
| <input type="checkbox"/> 10. Bleeding nose                          | <input type="checkbox"/> 37. Boils                                    |
| <input type="checkbox"/> 11. Asthma or wheezing                     | <input type="checkbox"/> 38. Sweat even in cold weather               |
| <input type="checkbox"/> 12. Coughing                               | <input type="checkbox"/> 39. Strong reactions to insect bites         |
| <input type="checkbox"/> 13. Out of breath                          | <input type="checkbox"/> 40. Headaches                                |
| <input type="checkbox"/> 14. Swollen ankles                         | <input type="checkbox"/> 41. Feeling pressure in head                 |
| <input type="checkbox"/> 15. Chest pains                            | <input type="checkbox"/> 42. Hot flashes                              |
| <input type="checkbox"/> 16. Racing heart                           | <input type="checkbox"/> 43. Chills                                   |
| <input type="checkbox"/> 17. Cold hands or feet even in hot weather | <input type="checkbox"/> 44. Dizziness                                |
| <input type="checkbox"/> 18. Leg cramps                             | <input type="checkbox"/> 45. Feel faint                               |
| <input type="checkbox"/> 19. Insomnia or difficulty sleeping        | <input type="checkbox"/> 46. Numbness or tingling in any part of body |
| <input type="checkbox"/> 20. Toothaches                             | <input type="checkbox"/> 47. Twitching of eyelid                      |
| <input type="checkbox"/> 21. Upset stomach                          | <input type="checkbox"/> 48. Twitching other than eyelid              |
| <input type="checkbox"/> 22. Indigestion                            | <input type="checkbox"/> 49. Hands tremble or shake                   |
| <input type="checkbox"/> 23. Heartburn or gas                       | <input type="checkbox"/> 50. Stiff joints                             |
| <input type="checkbox"/> 24. Abdominal pain                         | <input type="checkbox"/> 51. Sore muscles                             |
| <input type="checkbox"/> 25. Diarrhea                               | <input type="checkbox"/> 52. Sore throat                              |
| <input type="checkbox"/> 26. Constipation                           | <input type="checkbox"/> 53. Sunburn                                  |
| <input type="checkbox"/> 27. Hemorrhoids                            | <input type="checkbox"/> 54. Nausea                                   |

Since the beginning of the semester, how many:

Visits have you made to the student health center or private physician for illness

Days have you been sick

**APPENDIX E: DEMOGRAPHIC SURVEY****Demographic Form**

Please provide the following information:

Name:

Age:

Race/Ethnicity:

Gender:   Male       Female

Class Standing:   First Year   Second Year   Third Year   Fourth Year

## APPENDIX F: INFORMED CONSENT DOCUMENT

### INFORMED CONSENT DOCUMENT OLD DOMINION UNIVERSITY

PROJECT TITLE: The Effects of Expressive Writing on Stress, Mood, Self-Efficacy and Perception of Instructor

#### INTRODUCTION

The purpose of this form is to provide information that may affect your decision to consent to participate in this research study on expressive writing and document that consent has been given to participate in this study.

#### RESEARCHERS

The Responsible Project Investigator is Nina W. Brown, Ed.D. LPC,NCC, FAGPA; Professor and Eminent Scholar of Counseling, Counseling and Human Services Department

The Principal Investigator is Sophia Taylor, Ed.S. Doctoral student, Counseling and Human Services Department

#### DESCRIPTION OF RESEARCH STUDY

In agreeing to participate, you will be randomly assigned to one of three experiment conditions: emotional writing, factual writing or non-writing group. The protocol for expressive writing asks study participants to write for 15 minutes a day for 3-4 consecutive days. Your instructor will not have access to your personal data or essays. These will only be reported as aggregate data that does not identify individual participants. If you consent to participate, your participation will last for three days for data collection. Approximately 144 subjects may participate in this study.

#### EXCLUSIONARY CRITERIA

You must be 18 years old, or older to participate in the study.

#### RISKS AND BENEFITS

**RISKS:** No risks are identified with this research, but as with any research, there is some possibility that you may be subject to risks that have not yet been identified. If at any time your participation causes you any increased psychological discomfort, you may stop your participation. There are two campus facilities you may utilize if you so desire: Student Health Services 1007 S. Webb Center, 683-3132 and/or Office of Counseling Services 1526 Webb Center, 683-4401

**BENEFITS:** There are no direct benefits for participation. An indirect benefit to you for participating in this study may be the possibility of improved academic outcome.

#### COSTS AND PAYMENTS

The researchers want your decision about participating in this study to be absolutely voluntary. The researchers are unable to give you any payment for participating in this study. Your instructor for the course will provide course credit and alternatives for choosing to not participate.

#### NEW INFORMATION

If the researchers find new information during this study that would reasonably change your decision about participating, then they will give it to you.

#### CONFIDENTIALITY

All information obtained about you in this study is strictly confidential unless disclosure is required by law.



The results of this study may be used in reports, presentations and publications utilizing the aggregated and analyzed results, but the researcher will not identify you.

#### WITHDRAWAL PRIVILEGE

You may withdrawal from this study at any time. You may consent to participate in this study but later decide that you would like to say NO. It is OK for you to say NO. Even if you say YES now you are free to say NO later, and walk away or withdraw from the study -- at any time. Your decision will not affect your relationship with Old Dominion University, or otherwise cause a loss of benefits to which you might otherwise be entitled.

#### COMPENSATION FOR ILLNESS AND INJURY

If you say YES, then your consent in this document does not waive any of your legal rights. However, in the event of harm, injury, or illness arising from this study, neither Old Dominion University nor the researchers are able to give you any money, insurance coverage, free medical care, or any other compensation for such injury. In the event that you suffer injury as a result of participation in this research project, you may contact Dr. Brown at 757-683-3245 or Dr. George Maihafer, the current IRB chair at 757-683-4520 at Old Dominion University, or the Office of Research at 757-683-3460 who will be glad to review the matter with you.

#### VOLUNTARY CONSENT

By signing this form, you are saying several things. You are saying that you have read this form or have had it read to you, that you are satisfied that you understand this form, the research study, and its risks and benefits. The researchers should have answered any questions you may have had about the research. If you have any questions later, you may contact : Dr. Nina W. Brown; 757-683-3245. If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should call Dr. George Maihafer, the current IRB chair, at 757-683-4520, or the Old Dominion University Office of Research, at 757-683-3460. And importantly, by signing below, you are telling the researcher YES, that you agree to participate in this study. The researcher should give you a copy of this form for your records.

\_\_\_\_\_  
Subject's Printed Name

\_\_\_\_\_  
Subject's Signature

\_\_\_\_\_  
Date

#### INVESTIGATOR'S STATEMENT

I certify that I have explained to this subject the nature and purpose of this research, including benefits, risks, costs, and any experimental procedures. I have described the rights and protections afforded to human subjects and have done nothing to pressure, coerce, or falsely entice this subject into participating. I am aware of my obligations under state and federal laws, and promise compliance. I have answered the subject's questions and have encouraged him/her to ask additional questions at any time during the course of this study. I have witnessed the above signature(s) on this consent form.

\_\_\_\_\_  
Investigator's Printed Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## VITA

SOPHIA SILL'S TAILOR

sophiatailor@gmail.com

### EDUCATION

**Doctor of Philosophy (Ph.D.)** -Old Dominion University, Norfolk, VA. (**Anticipated December 2010**)

**Major: Counseling**  
**CACREP Accredited**

**Education Specialist (Ed.S.)** -Old Dominion University, Norfolk, VA. (**2009**)

**Major: Counseling**

**Master of Arts (M.A.)** - Norfolk State University, Norfolk, VA. (**1999**)

**Major: Community Counseling**

**Bachelor of Science (B.S.)** - Southern Ill. University, Carbondale, Ill. (**1997**)

**Major: Workforce Education and Development**

### PROFESSIONAL EXPERIENCE

**4/2010 - Present     Counselor - National Counseling Group**  
**Virginia Beach, VA.**

- Provides direct clinical intensive in home counseling utilizing brief solution focused treatment to individuals and families
- Provide mental health support services to assist clients with activities of daily living, finding community resources, such as recreational activities, childcare services, financial resources, and employment resources.
- Prepares written diagnostic assessments, assessing clients from multiple perspectives, including family functioning, psychological/emotional, social, academic, medical, behavioral, substance abuse, skills, strengths, barriers to economic self-sufficiency, treatment history, and others, and utilizing various assessment instruments to evaluate matters of significance with respect to the mental health and functioning of clients and families.
- Prepares written service plans, incorporating input from clients to identifying problem areas and needs, strategies, and service objectives
- Prepares progress reports as required by referral source or service purchaser. Documents case activities for both clinical and billing purposes.
- Participates in Child Specific Team, Family Assessment and Planning Team, and other interdisciplinary, diagnostic, or planning meetings.
- Collaborates and coordinates with other case involved service providers and professionals, such as attorneys, school personnel, social workers, and probation officers.
- Prepares written discharge summary and plan.

**8/2007- 5/2010      Director -Graduate Counseling Resident Clinic  
NCS Board/ODU Olney Road Counseling Center  
Norfolk, VA.**

- Develop and communicate operational policies and procedures for the counseling center
- Train, supervise and evaluate student-counselors
- Evaluate and review client charts for compliance with federal, state and agency policies
- Provide assessment, intake, and enrollment for all clients referred to the counseling center.
- Provided individual counseling and facilitate group counseling for mood disorders, co-occurring disorders and anger management

**8/2008 –6/2009      Counselor in Residence (LPC) --Old Dominion Student  
Counseling Center  
Norfolk, VA.**

- Provided individual counseling
- Conducted intake screenings and assessments
- Developed individual treatment plans

**10/2002 – 8/2007      Counselor –Tidewater Community College Upward Bound  
Program,  
Chesapeake, VA.**

- Conducted needs assessments and compiles data to develop student individual education plans
- Counseled students individually and in groups regarding personal, academic, and career issues with program participants at Chesapeake Public High Schools
- Recruited Upward Bound project participants by providing informational presentations at schools and in the community
- Conducted school based counseling
- Instructed a college preparatory class
- Produced mandated reports for documentation of program activities
- Monitor Upward Bound participants academic progress

**2/1988 - 6/1996      Petty Officer - Unites States Navy**

- Served as a divisional career counselor
- Health Benefits advisor to military dependents
- Conducted training on various topics including : Community Health Resources, Addictions and Technical Skills

**PROFESSIONAL CREDENTIAL/AWARDS**

**Professional School Counselor - License # 651764 Standard Certificate (New Jersey)**

**Qualified Mental Health Professional**

**Licensed Eligible Mental Health Provider-Virginia**

**Awarded 3-year Ph.D. Teaching/Research Assistantship at Old Dominion University (2007-2010)**

### CLINICAL SUPERVISION

**8/2007 - 5/2010 Clinical Supervisor Department of Counseling and Educational Leadership  
Old Dominion University**

- Provided weekly individual and group supervision for master's degree practicum and Internship students in counseling.

**Fall 2007** - Completed Counseling 670- Practicum Counseling Supervision

**Spring 2008** - Completed Counseling 820- Counselor Education Teaching and Practice

**Fall 2008** - Completed Counseling 869- Advanced Supervision Practicum Counseling

### RESEARCH

Dissertation: *The Effects of Expressive Writing On Stress, Mood, And Perception of Self-Efficacy And of Instructor*

### TEACHING EXPERIENCE

Fall 2007 Practicum and Internship Supervision, Graduate Counseling Students

Fall 2007 Introduction to Counseling (co-taught)

Sum. 2010 Introduction to Human Services (co-taught)

Spring 2009 Growth Group